AD-A087 198 GENERAL RESEARCH CORP MCLEAN VA OPERATIONS ANALYSIS GROUP F/G 15/3
ARMY COMBAT CAPABILITIES ANALYSIS COMCAP 85.(U)
JUN 79 J B CAMPBELL, L J DONDERO DAAG39-78-C-0053
UNCLASSIFIED GRC-1051-01-79-CR NL

1051-01-79-CR

12

B.S

Army Combat Capabilities Analysis
COMCAP 85

Final Report

By

J.B. Campbell
L.J. Dondero
R.E. Forrester

June 1979

OPERATIONS ANALYSIS GROUP

GENERAL RESEARCH CORPORATION

A SUBSIDIARY OF FLOW GENERAL INC.

7655 Old Springhouse Road, McLean, Virginia 22102

Prepared For:

USDA Materiel & Readiness Command
Battlefield Systems Integration Division (BSID)

DISCLAIMER NOTICE

THIS DOCUMENT IS BEST QUALITY PRACTICABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

1051-01-79-CR

Army Combat Capabilities Analysis
COMCAP 85

Final Report

By

J.B. Campbell
L.J. Dondero
R.E. Forrester

June 1979

OPERATIONS ANALYSIS GROUP

GENERAL RESEARCH CORPORATION

A SUBSIDIARY OF FLOW GENERAL INC.

7655 Old Springhouse Road, McLean, Virginia 22102

Prepared For:

USDA Materiel & Readiness Command
Battlefield Systems Integration Division (BSID)

UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: 1051-01-79-CR	2. GOVT ACCESSION NO.: AD-A087 198
3. RECIPIENT'S CATALOG NUMBER:	
4. TITLE (and Subtitle): ARMY COMBAT CAPABILITIES ANALYSIS COMCAP 85.	5. TYPE OF REPORT & PERIOD COVERED: Final Rept.
6. PERFORMING ORG. REPORT NUMBER: 1051-01-79-CR	
7. AUTHOR(s): J. B. Campbell, L. J. Pondero, R. E. Forrester	8. CONTRACT OR GRANT NUMBER(s): DAAG39-78-C-0053
9. PERFORMING ORGANIZATION NAME AND ADDRESS: General Research Corporation, TWO, 7655 Old Springhouse Road, McLean, VA 22102	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS:
11. CONTROLLING OFFICE NAME AND ADDRESS: USA Materiel Development & Readiness Command, Battlefield Systems Integration Directorate, Alexandria, VA 22333 ATTN: DRCBSI	12. REPORT DATE: June 1979
	13. NUMBER OF PAGES: 134
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office):	15. SECURITY CLASS. (of this report): Unclassified
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE:

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; unlimited distribution.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Combat Simulation
Weapons and Unit Effectiveness Values

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report is an analysis of the combat value of US and USSR ground combat weapons projected for 1985. The method of analysis was the use of the GRC COMCAP II methodology of 1974 to update killer-victim scoreboards and generate new WEV values.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

CONTENTS

1 INTRODUCTION

1.1 BACKGROUND FOR THIS STUDY

In 1974, in an OSD/Army-sponsored study, "NATO Combat Capabilities Analysis,"[1] General Research Corporation (GRC) developed an experimental set of close-combat weapons values derived from measurement of the contribution of each weapon to the outcome of a simulated maneuver unit engagement. These weapons effectiveness values (WEV) were calculated from the so-called "killer-victim" attrition results that are the principal data outputs of the GRC CARMONETTE[2] simulation.

The sets of weapons values published in 1974, although limited in scope, attracted considerable attention as one interesting alternative means of "scoring" or "weighting" weapons systems in a combined arms context. Their particular appeal was that, unlike other extant systems, they reflected the nuances of the simulated dynamics of close combat (i.e., each sides' movements, search-and-acquisition, engagements and attrition were influenced in tempo and scope by the other side's actions and reactions). Also, they revealed (sometimes unanticipated) synergistic effects among the weapons of one side as numbers of weapons and tactical dispositons were varied.

Given these attributes, the WEVs of 1974 have been explicitly employed in ongoing force structure analysis by at least one major Army studies and analysis agency: USA DARCOM Battlefield Systems Integration Division (BSID).

---

[1] G. W. Bolling, et al., NATO Combat Capabilities Analysis II (COMCAP II) (U), General Research Corporation OAD CR-8, August 1974 (SECRET).

[2] CARMONETTE, 1974, General Research Corporation, AD A007843, 007844, 007845, 5 August 1974 (UNCLASSIFIED). (This version of CARMONETTE, unofficially known as "CARMONETTE 7," was prepared by GRC as instructional documentation in the adoption of the model by the USA Concepts and Analysis Agency.)

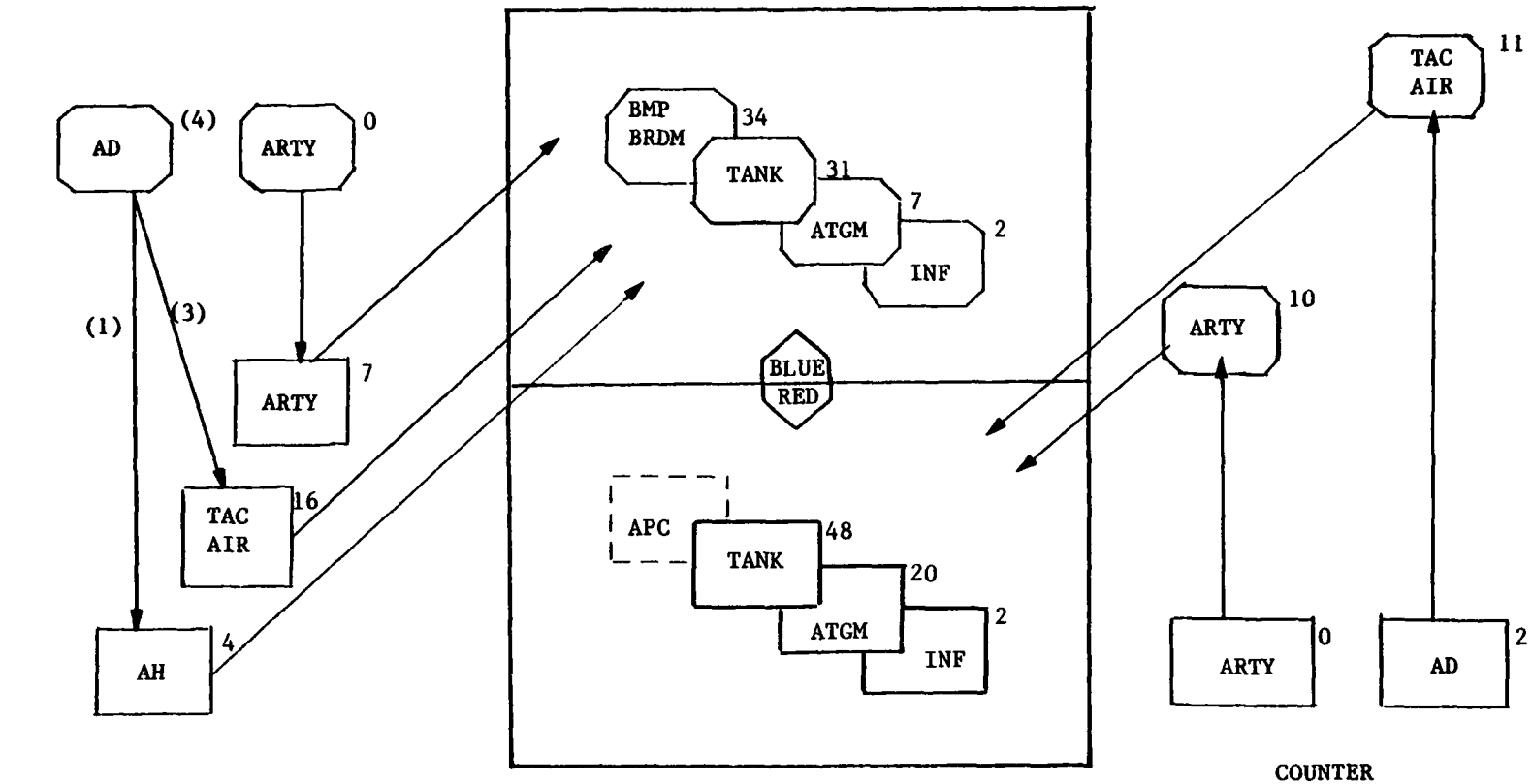
In early 1977, the Director of BSID gave his staff the task of finding an analytic measure of the worth of one weapons system relative to another. The purpose of this task was to assess the merit of various alternative real or conceptual materiel developments. Since the Battlefield Systems Integration Directorate of DARCOM is an extremely small group with limited resources, the decision was made by the director that BSI would not attempt to create or use large combat models to study weapon systems performance. Rather, to the extent possible, it would use completed off-the-shelf studies such as COEA's to understand the worth of various developmental opportunities. To this end, the director wanted to be able to view weapon system performance over wide ranges of conditions as reflected by different models, run for different purposes (e.g., the tank in the AAH COEA versus the tank in the XM1 COEA), all with the same measure of worth. Furthermore, the analytic tool chosen had to be capable of quick response.

The methodology finally selected was based on the well-known eigenvalue technique of Dare and James (July 1971), Thrall (1972), and Holter (1973). The Holter interpretation of the eigenvalue technique in the GRC COMCAP II and III studies of 1974 and 1975 was considered by BSI to be the most ambitious and carefully executed example of this analytic tool. Therefore, it constituted the basic building block for subsequent work by BSI.

BSI constructed programs for a within-the-directorate mini-computer that took as input the killer-victim scoreboards of completed, off-the-shelf Army combat modeling efforts and, in a matter of minutes, produced weapon system values using the Holter/GRC approach. This methodology was refined by the director of BSI with suggestions from the MITRE and Vector Research Corporations. The final product of these efforts yielded the Central Duel charts of Fig. 1.1. These charts exhibit the so-called Spudich-values (after J. Spudich of Booz-Allen) rather than the usual eigenvalue derived weapons values. A Spudich value is simply the usual weapon's value times the number of such weapons in the Blue (or Red) force initially, divided by the force strength (the sum of all such

FORCE ON FORCE ANALYSIS

BLUE '77 VS. RED '77



COUNTER WEAPONS
Red 21
Blue 27

CENTRAL DUEL
Red 74
Blue 70

COUNTER COUNTER WEAPONS
Red 4
Blue 2

Red

Blue

Figure 1.1. Central Dual Charts

products, over all weapons in the force). Thus, they represent the percent contribution of each weapon to its force strength. The principal indicator of combat model battle results is, however, the force effectiveness ratio (the quotient of Blue to Red force strengths). The combination of Central Duel charts and force effectiveness ratios gave the director of BSI the synthesis of combat modeling results he desired (over 50 separate off-the-shelf combat modeling results are in the BSI killer-victim library).

One further step remained. It was noted by BSI that if one started with a killer-victim scoreboard, for example, from the AAH COEA involving the AH-1S helicopter with Tow and used "informed" judgment to increase/decrease its attrition rates against various targets to reflect the added lethality/survivability of the AAH/Hellfire and then calculated weapons values, one obtained a close approximation to the weapons values obtained by direct calculation from the results given in the AAH-COEA. Several experiments of this type were carried out with the primary object being to estimate the force effectiveness ratio of a modeled battle where one or more weapons have been replaced, on a one-for-one basis, by "new" systems defined by using military/technical judgment as to the percent increase/decrease in the new system's ability to kill or avoid being killed. Since dramatic increases in conventional weapons system capabilities seldom occur, these changes were generally small and the resulting values were thought to compare well with what would be obtained from explicit modeling efforts.

Notice then that the original scenarios of the input results could not be changed, the numbers/mixes of weapons were not changed and the input killer-victim scoreboards (equivalently, the "input" average attrition rates) were changed by small amounts. Central Duel charts were calculated corresponding to the "adjusted" input model results and these were compared to the original to obtain a rough (but quick) estimate of the worth of a real or conceptual weapons system development.

1.2 PURPOSE OF THIS STUDY

After numerous excursions of the type described above, BSI produced what it considered to be an estimate of "COMCAP 1985." That is, the GRC COMCAP study as if it had been carried out with the same scenarios as the original, but with 1985 type weapons replacing the circa 1977 weapons systems. Since this was a rather large complex extrapolation for such a simple methodology, BSI felt that a "bench-mark" or calibration of the estimate to actual COMCAP CARMONETTE runs should be obtained. Further, in order to reduce the number of accidental sources of divergence, a sole source contract was obtained for GRC to use the same scenarios (including terrains, methods of calculation of LOS, etc.) in several CARMONETTE runs as they did in the original COMCAP studies; then calculate the weapons values and force ratios and provide these to BSID for comparison with their "quick and dirty" estimates. Additionally, these new GRC CARMONETTE runs will furnish BSI analysts with numerous killer-victim scoreboards, with well-defined scenarios, to serve as a basis for extrapolation to later time periods in the same way that COMCAP II and III served for current systems.

1.3 METHODOLOGY FROM COMCAP II, III

1.3.1 Battle Scenario

In the COMCAP II CARMONETTE runs, four tactical scenarios were used, each of which defined a different Blue posture/mission: long-range defense, short-range defense, delay, and attack. Other variables were the respective size and composition of Red and Blue forces. For this study, it was agreed that the new CARMONETTE runs would use the long-range defense scenario designated in COMCAP II as "2101" (the first two digits are indexes of the particular composition of Blue and Red forces, respectively (to be noted later), and the fourth digit describes the terrain and maneuver scheme (also developed fully below). Thus, all the new "battle" runs for this study consist simply of 1985 weapons characteristics inserted in the Base Case "2101" scenario. This scenario was judged to be most representative of the situation confronting NATO defensive elements in the early, critical stages of a WP attack and one

that would be most easily compared to the BSID extrapolation of the original COMCAP results.

1.3.2 1985 Weapons Characteristics

The weapons descriptors and characteristics used for the projected 1985 weapons are spelled out in Section 2. These were compiled by GRC on the basis of cited authoritative documentation provided by BSID, as modified or expanded by BSID judgment.

1.3.3 Method of Incorporating 1985 Weapons in New Runs

At the outset, BSID requested a few runs in which the entire complement of prescribed 1985 weapons on both sides would be inserted in the "2101" scenario. These runs (described in section 3 as "3301" A, B, C) incorporate effects that are not capable of being reflected by BSID methodology and so are necessary efforts in order to judge possible sources and possible magnitudes of divergence between BSI extrapolation and the results of detailed CARMONETTE modeling. Given this base, the successive runs then incorporated one major new 1985 weapon at a time, for each side, but in a cumulative fashion, in an attempt to measure the pure incremental value of these weapons operating in the original COMCAP tactical environment. These runs were 9 in number, although two were minor variants of others. The detailed structure and nomenclature is shown in section 3 and Fig. 3.1.

1.4 FORMAT OF THIS REPORT

As should be clear from the previous discussion, the sponsor requirements in this study are simply the summarized and integrated set of weapons performance results in the respective treatments. They will be used (as noted earlier) to provide BSID with input data to calibrate their internal analysis results. The expositions of CARMONETTE and WEV methodology are contained in the COMCAP II report. This report contains, then, brief statements of force structures, scenario and weapons characteristics used in the simulation, and consecutive and cumulative results of the respective CARMONETTE and WEV treatments.

2 SCENARIO, FORCE STRUCTURES, AND WEAPON CHARACTERISTICS

2.1 PURPOSE

This section adumbrates the tactical environment, relative force postures and compositions, and weapons characteristics essential to the operation of the combined-arms simulation. As noted earlier, a single "typical" CARMONETTE terrain board is used for all the simulated battles. Similarly, all the simulation treatments incorporate identical postures for Red (frontal attack) and Blue (hasty defense) and identical organization for battle. The variables in the respective treatments are then simply the estimated enhanced weapons capabilities characteristic of the 1985 candidate weapons.

2.2 SCENARIO

The tactical operation depicted in the simulation is a long-range (4000 meters) frontal attack by three reinforced Red mechanized companies, supported by air defense weapons, helicopters, and artillery, against a Blue reinforced company, with proportionate slices of support, in a hasty defense. The Red attack is launched on about a 2-kilometer front, along three roughly parallel axes, against a Blue hasty defense on high ground, permitting extended lines-of-sight to approaching forces. The general configuration of postures, maneuver, and terrain is shown in Figure 2.1.

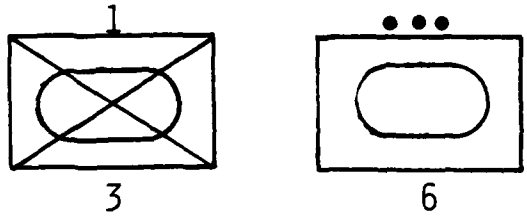
2.3 FORCE COMPOSITION AND ORGANIZATION

Figures 2.2 and 2.3 indicate the major unit and weapons structure of Red and Blue forces involved in the simulation scenario. It will be noted that these weapons lists emphasize tanks and other armored vehicles (AV) and weapons that can kill them, or that are counterweapons to tank/AV killers.

Tables 2.1 and 2.2 indicate the tactical organizations (and the associated unit numbers, as used in CARMONETTE inputs) of the maneuver

Figure 2.1. COMCAP '85 Tactical Scenario

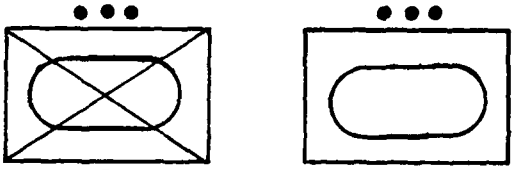
MANEUVER UNITS



MAJOR WEAPONS		
	T-62 (T-72)	20
	BMP	30
	BRDM	3
	SAGGER MP	2
	BTR 60	3
	100 MM AT	2
	73 MM	2
	AA 23/4	4
	HIND	2
	120 MORT	6
	122 How	18
	152 How	6
	122 MRL	1

Figure 2.2 Attacking Red Force

MANEUVER UNITS



MAJOR WEAPONS:		
	M60 A3 (XM-1)	10
	TOW	10
	DRAGON	6
	AH	2
	81 MORT	3
	4.2" MORT	4
	155 How	12
	8" How	4

Figure 2.3 Defending Blue Force

TABLE 2.1

COMCAP 85 RED FORCE ORGANIZATION

MR BN, 2 TANK COS

CARMONETTE UNIT NO.

1.	4 BMP w/SAGGER	28.	AT/BRDM w/SAGGER
2.	24 Man Rifle Plt & Co HQ	29.	AT/BRDM w/SAGGER
3.	3 BMP w/SAGGER	30.	AT/BRDM w/SAGGER
4.	24 Man Rifle Plt	31.	2 Man Pack 73-mm RR
5.	3 BMP w/SAGGER	32.	2 Man Pack SAGGER
6.	24 Man Rifle Plt	33.	100-mm AT Gun
7.	Tank Plt - 4 T-62	34.	100-mm AT Gun
8.	BTR-60		
		35.	AA Plt - 2 23/4
9.	4 BMP w/SAGGER	36.	AA Plt - 2 23/4
10.	24 Man Rifle Plt & Co HQ	37.	HIND
11.	3 BMP w/SAGGER	38.	HIND
12.	24 Man Rifle Plt	39.	3 GRAIL
13.	3 BMP w/SAGGER	40.	4 GRAIL
14.	24 Man Rifle Plt	41.	4 GRAIL } or SA 7
15.	Tank Plt - 3 T-62	42.	4 GRAIL
16.	BTR-60		
		43.	120-mm Mortar
17.	4 BMP w/SAGGER	44.	122-mm How Btry
18.	24 Man Rifle Plt & Co HQ	45.	122-mm How Btry
19.	3 BMP w/SAGGER	46.	122-mm How Btry
20.	24 Man Rifle Plt	47.	152-mm How Btry
21.	3 BMP w/SAGGER	48.	1 122-mm MRL or SA 9
22.	24 Man Rifle Plt		
23.	Tank Plt - 3 T-62		
24.	BTR-60		
25.	Tank Plt - 4 T-62		
26.	Tank Plt - 3 T-62		
27.	Tank Plt - 3 T-62		

Note: Although unit weapons change in successive treatments, unit numbers remain same throughout.

TABLE 2.2

COMCAP 85 BLUE FORCE ORGANIZATION (BASE)

2 TK PLTS (A3), 2 INF PLTS - 4 TOW, 6 DRAGON, 12 LAW, 2 ATK HEL

CARMONETTE UNIT NO.

1.	Squad APC	Mech Rifle Plt	24.	Squad APC	Mech Rifle Plt
2.	Rifle Squad		25.	Rifle Squad	
3.	DRAGON		26.	DRAGON	
4.	Squad APC		27.	Squad APC	
5.	Rifle Squad		28.	Rifle Squad	
6.	DRAGON		29.	DRAGON	
7.	Squad APC		30.	Squad APC	
8.	Rifle Squad		31.	Rifle Squad	
9.	DRAGON		32.	DRAGON	
10.	M60A3 Tank	Tank Plt	33.	APC w/TOW	TOW Sec
11.	↓		34.	APC w/TOW	
12.			35.	M60A3 Tank	Tank Plt
13.			36.	↓	
14.	M60A3 Tank		37.		
15.	APC w/TOW	TOW Sec	38.		
16.	APC w/TOW		39.	M60A3 Tank	

17.	81-mm Mortar Plt (3)	Arty
18.	4.2-inch Mortar Plt (4)	
19.	155-mm How Btry (6)	
20.	155-mm How Btry (6)	
21.	8" How Btry (4)	
22.	Atk Hel	Atk Hel Sec
23.	Atk Hel	

Note: Although unit weapons change in successive treatments, unit numbers remain same in all treatments.

and fire support units whose major weapons are listed in Figures 2.1 and 2.2. In the Red force structure, some organizational substitutions were necessary to incorporate 1985 weapons, since CARMONETTE as currently configured can accommodate only 48 units on either side.

2.4 TERRAIN AND LINE-OF-SIGHT (LOS) ANALYSIS

One of the more important features of CARMONETTE is the dynamic line-of-sight determination among all enemy and friendly units as the moving maneuver unit proceed along their attack paths (or stop, at certain pre-ordered points). This determination is continuous for all units as moving units progress from one defined grid square to another. The general configuration of LOS for this scenario is shown in Figure 2.4. The circled x's in the lower right quadrant show the front-to-rear and left-to-right limits of the Blue defensive deployments. Each other x depicts a grid square (60 x 64) which can be seen from at least one defending position. The superimposed range arcs (1000 to 3000 m) indicate that, in this terrain, enemy armored vehicles can be more or less continuously engaged out at the maximum ranges of respective defending weapons.

2.5 1985 WEAPONS CHARACTERISTICS

The CARMONETTE simulation requires a wide range of detailed weapons descriptors, not all of which were currently "documentable" for the 1985 weapon concepts of concern in this study. Accordingly, the study group first sought a judgmental consensus on these data from among BSID principals, and, failing that, made extrapolations based on its own experience in weapons technology. The results of this process, expressed in categories of CARMONETTE input, are indicated in Table 2.3.

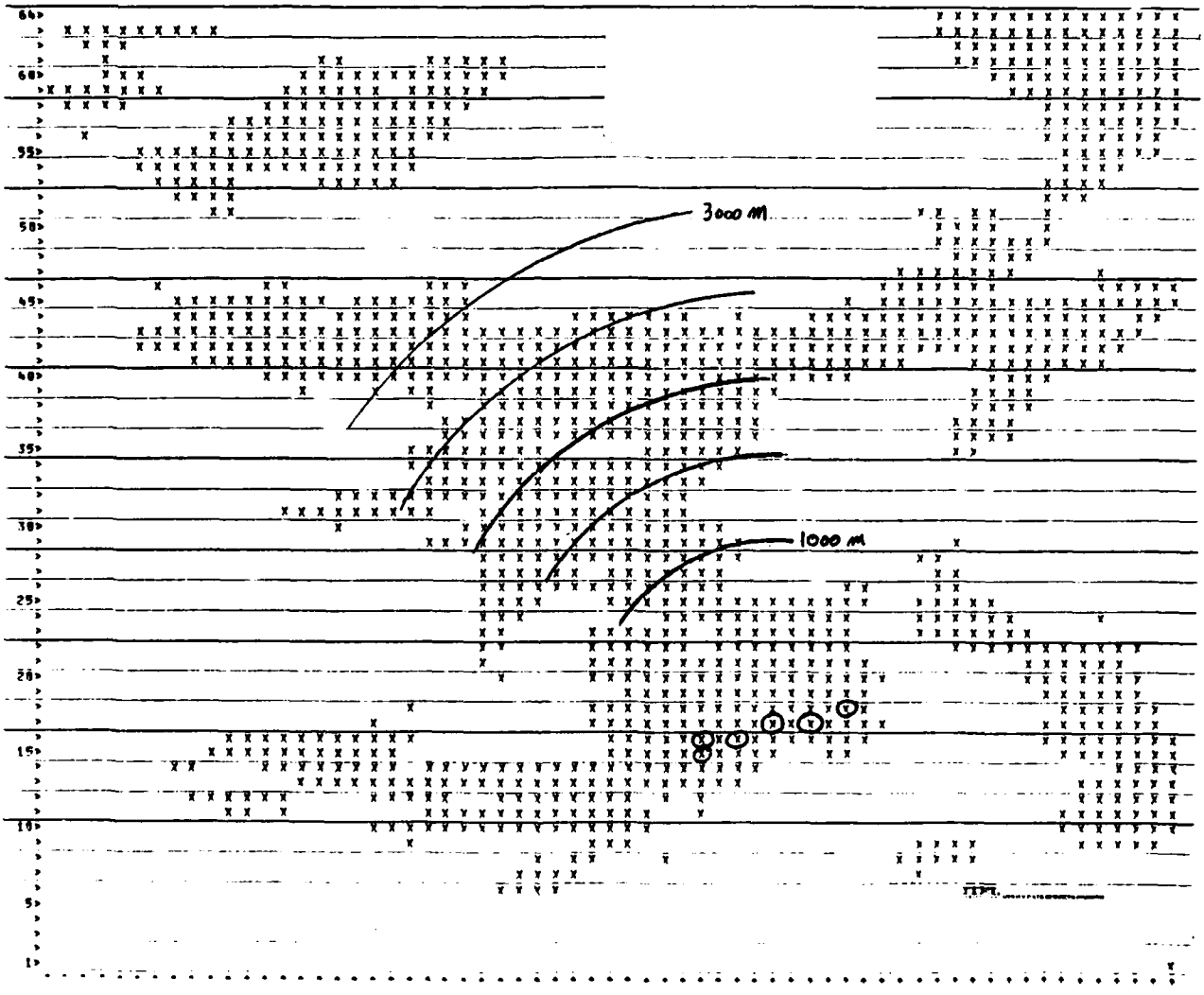


Figure 2.4 LOS Map 1 COMCAP 85

TABLE 2.3

WEAPONS CHARACTERISTICS

Weapon Type	Weapon No.	1 - Characteristics	2 - Accuracy	3 - P_K & Ammo Selection	4 - P_K vs Inf. & Veh.	5 - Priority List
B - Imp. 81mm Mort	1	n/c	Not used	n/c	Arbitrary increase in lethal radius from 14 to 16m for cover State 2 increases P_K from .02 to .03. Added slight P_K = .0001 against vul. State 4	Not used
B - GSRS	4	Max range is largest allowed by CARMONETTE Aiming times assumed same as other artillery Round velocity assumed at 200 m/sec for mid range Reload time is function of rate of fire; assumed entire launcher load expended then all 12 rds reloaded = 2.4 min (this is 12 × .2)	Not used	Only has one type of ammo so entries in column 14 for first 11 vul. classes not needed; i.e., always use ammo type 1 Estimate of troops surviving a kill on armored carrier assumed to be same as hit by 8" with ICM.	12 times as many submunitions will be in the impact area as one round of 8"; therefore P_K's of 8" - line 8 are multiplied by 12.	Not used
B - XM1 120mm	13	Increased max range to 3500 meters Reduced aim time from 10 sec to Reaim time reduced from 9 sec to 4 sec assumes better stabilized fire control to hold on tgt Load time left same 20 sec since larger ammo wt. Reload time left same.	Columns 29-30 & 32-33 show miss dist for APDS & HEAT stationary gun shooting at stationary target-giving following P_H APDS / HEAT P_H at 3500 = .23 / .08 P_H at 2475 = .45 / .28 P_H at 1500 = .75 / .53 P_H at 500 = 1.0 / 1.0 Figures based on review of Brit Chieftan (120) and Leopard II (120) Other entries scaled from the above as follows: add 10% if moving and firing add 10% if tgt moving add 25% if being fired on	Scaled by increased caliber of the round and then degraded for effect against the T-72 because of increased T-72 armor protection.	Scaled by increase in explosive in larger round.	No change List 1 - 1 SAGGER/BRDM 2 BMP 3 T-72 4 FAGOT 5 100 mm AT G 6 SA-9 List 2 - 1 T-72 2 SAGGER/BRDM 3 BMP 4 100 mm AT G 5 FAGOT 6 23-Q List 3 - 1 T-72 2 BMP 3 BRDM/SAGGER 4 FAGOT 5 73 mm RR 6 23-Q

TABLE 2.3 (cont.)

WEAPONS CHARACTERISTICS

Weapon Type	No.	1 - Characteristics	2 - Accuracy	3 - P_K & Ammo Selection	4 - P_K vs. Inf. & Veh.	5 - Priority List
R - T-72 (125)	14	Same as XM1	Slight degradation of accuracy at longer ranges based on what is known of fire control emphasis APDS / HEAT P_H at 3500 = .16 / .06 P_H at 2475 = .38 / .23 P_H at 2000 = .53 / .38 P_H at 1500 = .75 / .53 P_H at 500 = 1.00 / 1.00	Scaled by increased caliber of the round and degraded by increased armor on XM1.	Scaled by increase in explosive in larger round.	List 1 - 1 ITV 2 IFV 3 XM1 4 DRAGON 5 DIVADS 6 Rifle Sq List 2 - 1 IFV 2 ITV 3 XM1 4 DIVADS 5 DRAGON 6 Rifle Sq List 3 - 1 XM1 2 IFV 3 ITV 4 DIVADS 5 Rifle Sq 6 DRAGON
R - Imp. 23/4	21	Increased range to 3200 Reduced aim time from 8 to 6 sec Increased average velocity to keep rd stable to 3200 Reduced re-load time from .03 to .02 min resulting in increase in rate of fire from 400 to 600 rds/min	Arbitrary decrease in miss distance of 10% resulting in following P_H by one TP 3200m = .03 2000m = .07 1000m = .20 500m = .48 for 12 seconds of firing or 10 TPs this would be P_H of 3200 = .26 2000 = .52 1000 = .89 500 = 1.00	Vulnerable area of AAH is less than one half the scout or Cobra vulnerable area therefore the prob. of kill given a hit for the AAH was reduced from .33 to .16.	Not used to shoot at ground targets.	n/c
B - DIVADS	28	Range from COEA Delay times similar to the 23 Q Rate of fire is 18 rds burst followed by 16.2 sec delay is same as 4 rds (per TP) every .06 min; so reload time = .06 & TP = 4 Average vel. is estimated for expected engagement range of about 3000m.	Accuracies estimated from COEA requirements resulting in P_H for 1 TP as follows 4000m = .20 3000m = .28 2000m = .38 1000m = .53 500m = .64 For 12 seconds of fires (or 3 TPs) P_H becomes 4000m = .49 3000m = .63 2000m = .76 1000m = .85 500m = .95	The 35mm round compared w/23mm will have larger effects area	Not used to shoot at ground targets	o Shoots only at the attack helicopter o Any interactions with fixed wing high performance air will be done outside of CARMONETTE.

TABLE 2.3 (cont.)

WEAPONS CHARACTERISTICS

Weapon Type	Weapon No.	1 - Characteristics	2 - Accuracy	3 - P_K & Ammo Selection	4 - P_K vs. Inf. & Veh.	5 - Priority List
B - 25mm on the IFV and an XM1	32 & 34	Data for 20mm, 23mm in ground role & 30mm were plotted and scaled to get values shown. Rate of fire assumed is 2 rds every 6 sec or 20 rds per minute (this emphasizes the AP in ground role.	Prob. of hits for stationary gunner shooting at stationary target are 3000 - .20 2500 - .31 2000 - .50 1500 - .64 1000 - .75 500 - .88	P_Ks assigned are best estimates by CRC.	Low P_Ks of killing inf were estimated based on comparison with other values	Priority List 1 - 1 Fagot 2 100mm AT G 3 73mm RR 4 23 Q 5 SA-9 6 Hind List 2 - 1 23 Q 2 SA-9 3 Hind 4 Fagot 5 BRDM/Sagger 6 BMP List 3 - 1 BMP 2 Fagot 3 BRDM/Sagger 4 Rifle Sq 5 100mm AT G 6 73mm RR
B - TOW (PIP) on ITV and IFV	35 & 43	Only change from previous data is increase in max range to 3750 and modest increase in velocity.	Constant accuracy at all ranges P_H = .92 when everything stationary.	Lowered P_K by 20% given a hit against the T-72 because of increased armor on T-72.	Not used	n/c
B - Cobra TOW	36	Same as previous data except increase in max range and increase in velocity	Constant accuracy not degraded when helicopter or target moving.	Lowered P_K by 20% given a hit against the T-72 because of increased armor on T-72	Not used	List 1 - 1 23 Q 2 SA-9 3 BRDM 4 T-72 5 BMP 6 Fagot List 2 - 1 23 Q 2 SA-9 3 BRDM 4 T-72 5 BMP 6 100mm AT G List 3 - 1 T-72 2 BMP 3 23 Q 4 SA-9 5 BRDM 6 100mm AT G

TABLE 2.3 (cont.)

WEAPONS CHARACTERISTICS

Weapon Type	Weapon No.	1 - Characteristic	2 - Accuracy	3 - P_K & Ammo Selection	4 - P_K vs Inf. & Veh.	5 - Priority List
R - Fagot	37	Data from AMSAA TR159 and SEPA. Aim time reduced to 7 sec, slight increase in speed, and large change in range envelop,i.e. from 500-3000 to 50 to 2000 meters.	Prob of hit is .9 throughout the flight envelope. Degradation for on the move implies with a moving force yet the weapon would be stopped briefly to fire.	Lowered P_K given a hit by 20% against the XM1 because of increase increase in effective armor thickness.	Not used	List 1 - 1 ITV 2 IFV 3 XM1 4 DRAGON 5 DIVADS 6 - List 2 - 1 IFV 2 XM1 3 ITV 4 DRAGON 5 DIVADS 6 - List 3 - 1 XM1 2 IFV 3 ITV 4 DRAGON 5 DIVADS 6 -
R - /Sagger R - BRDM/Sagger	38 & 39	Data from AMSAA TR159 & SEPA. Min range reduced to 300 meters. Increased min. crew requirement to fire from 1 to 2. Aim time reduced from 10 to 7 sec and missile velocity reduced to *120 m/sec.*				
B - Imp. DRAGON	40	All data as provided by McDonald-Douglas for the PIP DRAGON.	P_H vary from .93 at minimum range to .75 at maximum range.	P_Ks same as provided by McDonald-Douglas except reduced by 20% against T-72.	Not used	n/c
B - VIPER	41	Range band reduced from previous characteristics for LAW (which exceeded the LAW capabilities). The round velocity was also reduced. Basic data points are from AMSAA TR159.	P_H for stationary gunner and target are at each range 500 = .05 400 = .16 300 = .48 200 = .88 100 = .99	Arbitrary increase in effectiveness of 20% but assumed increased armor of T-72 offset this increase	Not used	n/c

TABLE 2.3 (cont.)

WEAPONS CHARACTERISTICS

Weapon Type	Weapon No.	1 - Characteristics	2 - Accuracy	3 - P_K & Ammo Selection	4 - P_K vs Inf. & Veh.	5 - Priority List
B - AAH/HELLFIRE R - HIND/ ?	48 &	Information from study done by CRC for BSI. Currently we have assumed the HIND D to have the same capability.	P_{H} vs range for basic conditions are shown below. A slight degradation for the target moving is imposed. 5000m = .64 4000m = .81 3000m = .90 2000m = .94 1000m = .99	P_Ks given a hit compare with existing data except the $P_{K\|H}$ of the T-62 of .82 was degraded to .66 for the T-72. This same value was used for the HIND vs the XM1.	Not used	Same as for TOW Cobra wpn #36 for AAH HIND List 1 - 1 DIVADS 2 ITV 3 IFV 4 XM1 5 DRAGON 6 Stinger List 2 - 1 DIVADS 2 IFV 3 ITV 4 XM1 5 DRAGON 6 Stinger List 3 - 1 XM1 2 IFV 3 ITV 4 Rifle Sq 5 DIVADS 6 Stinger
R - SA-9	53	Data from GRC Report CR-92, Jan 1975. Times are guesses. It is assumed a burst of 4 missiles, volley or ripple, are fired.	P_{H} with one of the 4 missiles in flight is estimated to be 0.75 at all ranges within the system envelope.	The redundancy and limited armor protection on the AAH (and assumed for the HIND) suggested a lower P_K given a hit than for a hit against the Cobra which was previously given as .95; therefore, .80 is entered for the AAH.	Not used	Red shoots at the Blue helicopters and Blue shoots at the Red helicopters on all priority lists.
R - SA-7 & B - Stinger	55 56	The improved SA-7 was assumed to have characteristics similar to the Stinger. Previous SA-7 velocity was excessive and adjusted down to 413 m/sec.	Previous miss distance data for SA-7 gave no capability against a stationary target. These were adjusted to give P_{H} at any range of 0.31 for both moving and stationary targets.			

3 SEQUENCE OF SIMULATION TREATMENTS

As noted in the introduction, after a base case "2101" run, three original aggregated 3301 runs were made. These were followed by a series of seven "one-weapon-at-a-time"* runs (nine counting major variants of two of the seven). Each of the 10 "3301" runs, as shown in Fig. 3.1, was accompanied by a WEV/UEV run to develop the individual weapon and unit values by the Holter method cited in the introduction.

*In the case of a few 1985 weapons, they were introduced as Red and Blue opposed pairs; e.g., the insertion of the Red HIND called for use of Blue DIVADS.

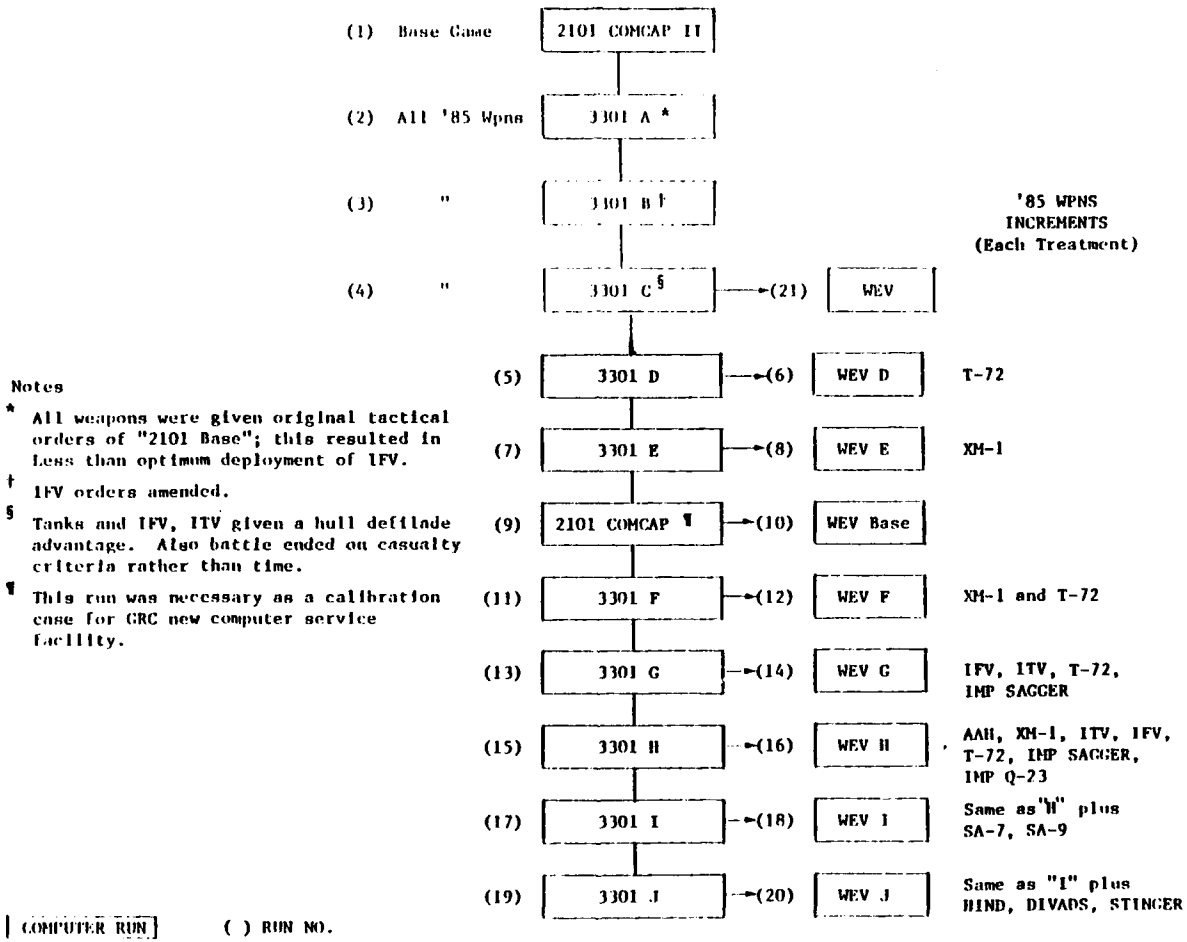


Figure 3.1 Sequence of Simulation Treatments

4 CARMONETTE TREATMENT RESULTS AND WEV ESTIMATES

This section contains, for each of the specified close-combat treatments (A through J in Figure 3.1): the summary results of CARMONETTE runs (15 replications each); a table recasting the basic killer/casualty data in a form necessary to running the WEV model; and the WEV, UEV tables resulting, with a consolidated table of all WEV, UEV as a final exhibit.

For treatment A, no WEV/UEV calculations were made since it was considered as preliminary effort to B. Thus, all subsequent treatments of the amended option (D through J) should have been expected to be comparable to B and not to A. C was a special-case variant to B; it provided hull defilade for defending tanks and APC, and also used a casualty threshold for end-of-battle rather than a standard time period.

The full computer printouts, including preprocessors for each treatment and each WEV run, are available to the sponsor, should he desire them.

Shown in the first exhibit of each set are the killer/casualty data as generated by the several CARMONETTE runs. In these tables the killers are identified by individual weapon type (T62 main tank, T62 coax machine gun, TOW missile, etc.) and the victims are identified by weapon platform (T62 tank, infantry fighting vehicle, etc.). In order that this data be used as input to the WEV-UEV methodology, it is necessary to regroup the output from CARMONETTE into weapons platform killers versus weapons platform victims. Thus the weapon platform killer labeled Red tank includes the Red tank main gun and the tank machine guns. The results of this rearrangement are shown in the second exhibit in each set (except A). In these tables each row corresponds to a Blue weapons platform type and each column to a Red weapons platform type. The box in the ith row and jth column of the table contains two numbers corresponding to (1) the number of Red platforms of type j killed by Blue platforms of type i

(upper left corner of box) and (2) the number of Blue platforms of type i killed by Red platforms of type j (lower left corner of box).

The third exhibit in each set is the WEV/UEV model results printout. In each of the tables, the WEVs are normalized on the Blue tank, and hence that tank has a value of 1.00. The number of weapon platforms of each type given in a table is the average number of that type fighting over the duration of the battle. The total value for each type of weapons platforms is the product of the WEV value and the average number of weapons platforms of that type. Also shown in each table is the average UEV (labeled Total Force Value in the table) for Blue and Red, along with the initial UEV (labeled Total Initial Force Value) for each force. Finally, the initial force ratio is shown--a ratio of initial Blue strength to initial Red strength. This ratio is independent of the weapon type on which the WEVs are normalized.

Simulation Results
2201 Base Case
3301 A, B, C

The following four sets of simulation results reflect the outcomes of the BSID original option of inserting all specified 1985 weapons at once in the COMCAP II Base Case Scenario. 3301A used the original tactical order set of 2201, which did not fully exploit the capabilities of the 1985 IFV. 3301B amended the IFV orders to bring them fully into play. 3301C was a tactical variant of B; it provided hull-defilade advantages for defending tanks and IFV/ITV, and it used a casualty threshold determinant of end of battle rather than a time limit.

SUMMARY OF TREATMENT 2101 BASE 11/08/78
NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	1.0	.1	0.0	0.0	.9	0.0	.1	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.6	0.0	0.0	0.0	.5	0.0	.1	0.0	.3	0.0	0.0	0.0
13	4.8	1.6	16.3	5.4	.1	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
35	14.8	4.9	19.3	5.9	0.0	0.0	1.0	.3	0.0	0.0	.8	.2	0.0	0.0	.2	.1
36	7.6	2.5	1.9	.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.8	.3
40	14.2	4.7	9.3	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	2.8	.9	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	.6	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	44.2	14.7	47.6	15.5	1.7	.1	1.0	.3	1.9	0.0	1.1	.2	.3	0.0	1.0	.3

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	.1	0.0	.1	0.0
2	.1	0.0	.1	0.0
13	.1	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0
52	0.0	0.0	.1	0.0
54	0.0	0.0	0.0	0.0
TOTALS	.3	0.0	.2	0.0

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES									
	CLASS 1		CLASS 5		CLASS 7		CLASS 8		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	2.8	0.0	.7	.1	0.0	0.0
5	.2	.1	0.0	0.0	3.7	0.0	.9	.1	0.0	0.0
6	.4	.1	.1	.1	.9	0.0	.3	0.0	0.0	0.0
14	8.9	2.9	.3	.1	4.5	0.0	2.7	1.5	0.0	0.0
19	.2	.1	.9	.5	1.3	0.0	2.5	1.5	0.0	0.0
20	.2	.1	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	1.1
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	.2
27	.9	.3	0.0	0.0	.4	0.0	.1	0.0	0.0	0.0
37	4.4	1.5	.8	.4	0.0	0.0	0.9	0.0	0.0	0.0
38	10.0	3.3	.8	.4	0.0	0.0	.7	.4	0.0	0.0
39	5.0	1.7	.7	.3	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	.3	.1	.2	0.0	.1	.1	0.0	0.0
47	0.0	0.0	.4	.2	.7	0.0	.2	.1	0.0	0.0
50	0.0	0.0	0.0	0.0	.2	0.0	.1	.1	0.0	0.0
51	0.0	0.0	0.0	0.0	.2	0.0	.1	.1	0.0	0.0

54	0.0	0.0	0.0	0.0	.7	0.0	.1	.1	0.0	0.0
TOTALS	30.0	10.0	4.4	2.2	17.1	0.0	9.2	4.3	2.7	1.3

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	1.6	.3	0.0	0.0	1.4	0.0	.1	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.5	0.0	0.0	0.0	.0	0.0	.1	0.0	.4	0.0	0.0	0.0
13	15.2	1.7	70.1	6.3	.1	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
35	57.2	6.4	56.5	5.6	0.0	0.0	2.1	.2	0.0	0.0	2.7	.2	0.0	0.0	.6	.1
36	38.4	4.3	6.5	.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	.4
40	37.9	4.2	39.8	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	9.6	1.1	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	1.5	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	.1	0.0	.1	0.0
2	.1	0.0	.1	0.0
13	.3	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0
52	0.0	0.0	.1	0.0
54	0.0	0.0	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	CLASS 1		CLASS 5		CLASS 7		CLASS 8		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	4.5	0.0	.4	.1	0.0	0.0
5	.6	.1	0.0	0.0	5.7	0.0	.6	.1	0.0	0.0
6	1.1	.1	.3	.1	.9	0.0	.2	0.0	0.0	0.0
14	27.6	3.1	.5	.1	7.7	0.0	6.0	1.7	0.0	0.0
19	.6	.1	3.4	.8	2.5	0.0	3.4	1.1	0.0	0.0
20	.6	.1	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	.7
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.7	.2
27	1.9	.2	0.0	0.0	.5	0.0	.1	0.0	0.0	0.0
37	10.1	1.1	1.0	.3	0.0	0.0	0.0	0.0	0.0	0.0
38	13.7	1.5	1.6	.4	0.0	0.0	1.5	.5	0.0	0.0
39	18.9	2.1	2.1	.5	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	.5	.1	.3	0.0	.1	.1	0.0	0.0
47	0.0	0.0	.7	.2	.9	0.0	.1	.1	0.0	0.0
50	0.0	0.0	0.0	0.0	.1	0.0	.4	.1	0.0	0.0

51	0.0	0.0	0.0	0.0	.2	0.0	.?	.1	0.0	0.0
52	0.0	0.0	0.0	0.0	2.3	0.0	1.1	.3	0.0	0.0
54	0.0	0.0	0.0	0.0	1.7	0.0	.1	.1	0.0	0.0

BLUF AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	54.4	0.0
2	43.2	0.0
13	10.8	38.2
29	2.4	0.0
35	37.0	0.0
36	9.1	0.0
40	46.4	0.0
41	48.0	0.0
45	16.9	0.0
52	138.8	0.0
54	31.7	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	131.2	0.0
5	236.0	0.0
6	72.0	0.0
12	40.0	0.0
14	74.2	131.9
19	214.4	9.5
20	10.9	0.0
21	69.6	0.0
22	1.5	0.0
25	16.8	0.0
26	3.0	0.0
27	6.7	17.0
37	15.7	0.0
38	102.1	0.0
39	19.5	0.0
42	29.6	0.0
46	72.0	0.0
47	275.2	0.0
50	157.4	0.0
51	593.9	0.0
52	451.7	0.0
54	304.2	0.0
55	5.4	0.0

BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	12.7	0.0
2	107.9	0.0
13	39.7	109.3
29	2.7	0.0
35	10.3	0.0
36	20.4	0.0
40	50.8	0.0
45	291.4	0.0
52	2307.2	0.0
54	1960.6	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	235.9	0.0
5	281.1	30.2
14	560.2	1241.8
19	3080.7	171.8
20	7.9	0.0
21	1115.0	0.0
22	4.6	0.0
25	901.0	0.0
26	25.3	0.0
27	11.5	148.0
37	19.4	0.0
38	82.8	0.0
39	8.0	0.0
42	146.4	0.0
46	416.0	0.0
47	******	0.0
50	6182.8	0.0
51	******	0.0
52	******	0.0
54	******	0.0
55	33.7	0.0

BASE

ITERATION =
RIGID = 1.371

BLUE FORCE DATA

[illegible]	[illegible]	[illegible]	[illegible]
M TANK	1.000	5.00	5.000
[illegible]	[illegible]	[illegible]	[illegible]
DRAGON	1.675	3.85	6.255
[illegible]	[illegible]	[illegible]	[illegible]
APTY	.010	23.00	.230
[illegible]	[illegible]	[illegible]	[illegible]
IFV	0.000	6.00	0.000

TOTAL FORCE VALUE = 23.825

TOTAL INITIAL FORCE VALUE = 36.771

RED FORCE DATA

[illegible]	VALUE	NUM. UNITS	TOTAL VALUE
M TANK	.869	12.65	8.463
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1.175	2.85	3.349
[illegible]	1.775	1.95	3.476
[illegible]	[illegible]	1.60	.287
[illegible]	.771	3.85	[illegible]
APTY	.039	27.00	1.053
[illegible]	[illegible]	[illegible]	.14
GRAIL	[illegible]	11.00	[illegible]
[illegible]	.141	3.00	[illegible]
IFV	.025	27.00	[illegible]

TOTAL FORCE VALUE = 39.361

TOTAL INITIAL FORCE VALUE = [illegible]

INITIAL FORCE RATIO = [illegible]

BASE

	RTK (1)	BMP (3)	BRDM (5)	MP SAG (4)	100 AT (9)	23/4 (11)	ARTY (16)	73RR (14)	GRAIL (13)	57 AD (12)	INF RPG (7)
B TK (1)	1.6 / 2.9	5.6 / 3.4	/ 1.7	/ 1.5	/ 0.3	/	/ 0.2	/ 0.1	/	/	/
TOW APC (5)	4.9 / 0.3	5.9 / 1.0	0.3 / 0.3	/ 0.4	0.2 /	0.1 /	/ 0.1	/ 0.1	/	/	/
DRAGON (8)	4.7 / 1.7	3.4 / 2.1	/	/	/	/	/ 0.2	/	/	/	/ 0.3
ATK HEL (15)	2.5 /	0.6 /	/	/	/	0.3 / 1.1	/	/	/	/ 0.2	/
ARTY (16)	/	/	/	0.1 /	/	/	/	/	/	/	/
INF, LAW (7)	0.9 /	0.1 /	/	/	/	/	/	/	/	/	/
APC (6)	/	/	/	/	/	/	/	/	/	/	/

SUMMARY OF TREATMENT 3301 A 05722778
NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	1.8	0.0	.5	.1	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.8	0.0	0.0	0.0	.8	0.0	.5	.1	0.0	0.0	0.0	0.0
7	0.0	0.0	.9	.3	.3	0.0	0.0	0.0	4.3	0.0	.6	0.0	.2	0.0	0.0	0.0
8	.4	.1	1.7	.5	.2	0.0	.2	.1	3.1	0.0	1.1	.2	.3	0.0	0.0	0.0
13	11.4	3.8	13.5	3.5	0.0	0.0	1.0	.3	0.0	0.0	.2	.1	0.0	0.0	0.0	0.0
34	0.0	0.0	2.8	1.0	0.0	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0	1.2	.4
35	13.8	4.6	16.1	4.9	0.0	0.0	1.2	.4	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0
40	15.0	5.0	30.8	10.4	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0
41	4.6	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	.4	.1	.5	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	5.4	1.8	4.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0	1.6	.5
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	51.0	17.0	78.4	21.9	1.7	0.0	2.6	.9	10.4	0.0	3.7	.7	.5	0.0	2.8	.9

	CLASS 13	
	MEN	VEH
1	.3	0.0
2	0.0	0.0
7	.6	0.0
8	.7	0.0
13	0.0	0.0
34	0.0	0.0
35	0.0	0.0
40	0.0	0.0
41	0.0	0.0
43	0.0	0.0
48	0.0	0.0
52	0.0	0.0
54	0.0	0.0
TOTALS	1.6	0.0

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES													
	CLASS 1		CLASS 5		CLASS 7		CLASS 8		CLASS 13		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	2.7	0.0	1.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	4.2	0.0	.4	.1	.1	0.0	0.0	0.0	.4	.1
6	0.0	0.0	.1	.1	1.0	0.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0
14	16.0	5.3	2.8	1.4	1.7	0.0	1.1	.3	0.0	0.0	0.0	0.0	0.0	0.0
19	.2	.1	.4	.2	.1	0.0	2.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	1.5	0.0	0.0
27	.2	.1	.4	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	10.0	3.3	.4	.2	0.0	0.0	.4	.3	0.0	0.0	0.0	0.0	0.0	0.0
39	2.8	.9	.3	.1	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0

42	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	.1	0.0	.5	.3	0.0	0.0	0.0	0.0	0.0	0.0
49	.8	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	.4	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	.1	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	.7	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0
TOTALS	30.0	10.0	4.5	2.3	11.0	0.0	6.9	2.8	.4	0.0	3.3	1.7	.4	.1

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.7	0.0	0.0	0.0	4.7	0.0	1.1	.1	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	2.5	0.0	.8	.1	0.0	0.0	0.0	0.0
7	0.0	0.0	2.7	.4	.4	0.0	0.0	0.0	14.4	0.0	.7	0.0	.2	0.0	0.0	0.0
8	2.4	.3	8.4	.7	.2	0.0	.6	.1	10.9	0.0	2.5	.2	.4	0.0	0.0	0.0
13	41.4	4.6	110.4	6.6	0.0	0.0	3.4	.4	0.0	0.0	.6	.1	0.0	0.0	0.0	0.0
34	0.0	0.0	7.6	.9	0.0	0.0	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0	3.6	.4
35	60.2	6.7	117.6	11.5	0.0	0.0	4.9	.5	0.0	0.0	1.1	.1	0.0	0.0	0.0	0.0
40	43.7	4.9	159.0	16.4	0.0	0.0	0.0	0.0	0.0	0.0	.8	.1	0.0	0.0	0.0	0.0
41	21.7	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	1.1	.1	1.6	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	28.5	3.2	57.7	4.3	0.0	0.0	0.0	0.0	0.0	0.0	1.1	.1	0.0	0.0	6.3	.7
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	CLASS 13	
	MEN	VEH
1	.4	0.0
2	0.0	0.0
7	.8	0.0
8	1.2	0.0
13	0.0	0.0
34	0.0	0.0
35	0.0	0.0
40	0.0	0.0
41	0.0	0.0
43	0.0	0.0
48	0.0	0.0
52	0.0	0.0
54	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES													
	CLASS 1		CLASS 5		CLASS 7		CLASS 8		CLASS 13		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	3.8	0.0	.7	0.0	.1	0.0	0.0	0.0	1.0	0.0

5	0.0	0.0	0.0	0.0	2.2	0.0	.4	.1	.1	0.0	0.0	0.0	2.4	.1
6	0.0	0.0	.3	.1	.6	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0
14	15.0	1.7	3.3	.8	4.6	0.0	1.2	.2	0.0	0.0	0.0	0.0	0.0	0.0
19	.6	.1	.7	.2	.1	0.0	4.5	1.4	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	.6	0.0	0.0
27	.6	.1	.7	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	9.9	1.1	1.3	.3	0.0	0.0	1.1	.4	0.0	0.0	0.0	0.0	0.0	0.0
39	7.0	.8	.5	.1	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	.1	0.0	.4	.2	0.0	0.0	0.0	0.0	0.0	0.0
49	3.2	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	.4	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	.1	0.0	.5	.1	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	2.5	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.5	.1	0.0	0.0

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	48.0	0.0
2	52.3	0.0
7	92.0	25.6
8	51.2	14.9
13	28.1	46.3
34	22.5	0.0
35	34.6	0.0
40	55.9	0.0
41	16.4	0.0
43	1.1	0.0
48	6.7	0.0
52	16.0	0.0
54	2.6	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	124.8	0.0
5	235.2	12.0
6	72.0	0.0
12	40.0	0.0
14	79.1	106.7
19	102.3	3.1
20	7.6	0.0
21	43.2	0.0
22	.4	0.0
27	.4	12.5
38	98.1	0.0
39	17.5	0.0
42	19.2	0.0
46	48.8	0.0
47	146.8	0.0
49	2.0	0.0
50	80.6	0.0
51	234.5	0.0
52	264.5	0.0
54	159.4	0.0
55	.9	0.0

BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	82.3	0.0
2	236.5	0.0
7	610.3	429.3
8	235.9	199.9
13	156.7	167.2
34	270.0	0.0
35	13.1	0.0
40	58.5	0.0
41	186.4	0.0
43	1.6	0.0
48	22.7	0.0
52	443.1	0.0
54	62.8	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	427.9	0.0
5	160.5	82.3
14	458.6	920.4
19	2111.0	65.6
20	18.4	0.0
21	530.7	0.0
22	1.1	0.0
27	.8	71.7
38	225.5	0.0
39	31.0	0.0
42	219.6	0.0
46	715.9	0.0
47	9642.2	0.0
49	2.1	0.0
50	5812.5	0.0
51	******	0.0
52	******	0.0
54	******	0.0
55	2.3	0.0

SUMMARY OF TREATMENT3301 B 06/01/78
NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	2.3	0.0	.3	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.4	0.0	0.0	0.0	2.7	0.0	.6	.1	.4	.1	0.0	0.0
7	0.0	0.0	.3	.1	.7	0.0	0.0	0.0	5.4	0.0	.5	.1	.3	0.0	0.0	0.0
8	.6	.2	1.7	.5	.7	0.0	0.0	0.0	3.3	0.0	.7	0.0	.1	0.0	0.0	0.0
13	13.4	4.5	19.3	4.9	0.0	0.0	.6	.2	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	.5	.1	.1	1.4	.5
34	0.0	0.0	2.3	.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	.3
35	13.4	4.5	16.5	4.9	0.0	0.0	1.6	.5	0.0	0.0	.7	.3	0.0	0.0	0.0	0.0
40	10.2	3.4	20.8	7.2	0.0	0.0	0.0	0.0	0.0	0.0	.9	.3	.1	.1	0.0	0.0
41	.8	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	16.0	5.3	30.9	9.3	0.0	0.0	1.6	.5	0.0	0.0	.3	.1	0.0	0.0	.8	.3
48	3.0	1.0	2.8	.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	.6
TOTALS	57.4	19.1	94.5	28.5	2.0	0.0	3.8	1.3	13.7	0.0	5.9	1.3	1.3	.2	5.0	1.7

	CLASS 13		CLASS 15	
	MEN	VEH	MEN	VEH
1	.2	0.0	0.0	0.0
2	.7	0.0	0.0	0.0
7	.2	0.0	0.0	0.0
8	.3	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0
28	0.0	0.0	2.7	1.3
32	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0
TOTALS	1.3	0.0	2.7	1.3

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES															
	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 13		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	.7	.1	.3	0.0	0.0	0.0	0.0	0.0
5	.4	.1	0.0	0.0	.4	.1	4.2	0.0	.9	.1	.3	0.0	0.0	0.0	.8	.1
6	0.0	0.0	0.0	0.0	.2	.1	.9	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
14	14.8	4.9	1.6	.8	2.4	.8	0.0	0.0	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0
19	.2	.1	0.0	0.0	1.4	.5	0.0	0.0	.5	.3	0.0	0.0	0.0	0.0	0.0	0.0
20	.2	.1	.3	.1	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	1.5	0.0	0.0
27	1.0	.3	.1	.1	1.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	8.4	2.8	.5	.1	2.6	.9	0.0	0.0	.4	.2	0.0	0.0	0.0	0.0	0.0	0.0
39	4.2	1.4	.4	.2	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

46	0.0	0.0	0.0	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
49	.8	.3	0.0	0.0	4.8	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.1	.1	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	.6	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	.2	0.0	0.0
TOTALS	30.0	10.0	2.9	1.5	13.6	4.5	9.5	0.0	3.8	1.2	.7	0.0	3.5	1.7	.6	.1

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS — RED TARGET CLASSES

	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.6	0.0	0.0	0.0	4.1	0.0	.2	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	6.2	0.0	1.3	.1	.8	.1	0.0	0.0
7	0.0	0.0	1.1	.1	1.7	0.0	0.0	0.0	13.1	0.0	.8	.1	.4	0.0	0.0	0.0
8	1.5	.2	5.8	.6	1.7	0.0	0.0	0.0	8.5	0.0	.5	0.0	.1	0.0	0.0	0.0
13	48.7	5.4	47.8	3.6	0.0	0.0	1.5	.2	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	.4	.3	.1	11.4	1.3
34	0.0	0.0	8.1	.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	.8
35	55.1	6.1	59.8	5.2	0.0	0.0	5.0	.6	0.0	0.0	1.8	.2	0.0	0.0	0.0	0.0
40	22.9	2.5	86.3	8.9	0.0	0.0	0.0	0.0	0.0	0.0	2.6	.2	.3	.1	0.0	0.0
41	1.9	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	67.7	7.5	77.6	8.1	0.0	0.0	3.7	.4	0.0	0.0	.8	.1	0.0	0.0	3.2	.4
48	9.0	1.0	12.0	.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	.8

	CLASS 13		CLASS 15	
	MEN	VEH	MEN	VEH
1	.2	0.0	0.0	0.0
2	.5	0.0	0.0	0.0
7	.2	0.0	0.0	0.0
8	.2	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0
28	0.0	0.0	1.5	.4
32	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS — BLUE TARGET CLASSES

	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 13		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	1.4	.1	.4	0.0	0.0	0.0	0.0	0.0
5	1.1	.1	0.0	0.0	1.1	.1	5.9	0.0	1.1	.1	.2	0.0	0.0	0.0	4.8	.4

12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
14	35.3	3.9	3.5	.9	6.7	.7	0.0	0.0	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0
19	.6	.1	0.0	0.0	3.7	.4	0.0	0.0	.7	.2	0.0	0.0	0.0	0.0	0.0	0.0
20	.6	.1	.5	.1	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	.6	0.0	0.0
27	2.1	.2	.3	.1	2.1	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	23.4	2.6	.8	.2	7.5	.8	0.0	0.0	.7	.2	0.0	0.0	0.0	0.0	0.0	0.0
39	15.2	1.7	1.3	.3	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
49	1.9	.2	0.0	0.0	15.2	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	.1	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	.3	0.0	0.0

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	50.4	0.0
2	53.9	0.0
7	88.8	28.0
8	46.9	16.5
13	31.5	44.9
28	9.6	0.0
32	6.9	23.1
34	21.6	.4
35	35.2	0.0
40	42.5	0.0
41	3.5	0.0
43	51.5	0.0
48	5.9	0.0
52	2.8	0.0
56	.2	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	143.2	0.0
5	247.2	8.8
6	72.8	0.0
12	40.0	0.0
14	68.1	78.4
19	84.7	4.7
20	11.2	0.0
21	52.0	0.0
22	.3	0.0
27	4.7	13.7
38	84.0	0.0
39	19.0	0.0
42	20.8	0.0
46	44.9	0.0
47	42.8	0.0
49	6.3	0.0
50	18.8	0.0
51	117.8	0.0
52	293.3	0.0
54	101.5	0.0
55	1.4	0.0

BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	55.5	0.0
2	132.3	0.0
7	366.7	507.4
8	108.5	95.7
13	100.1	111.4
28	65.8	0.0
32	92.5	361.6
34	145.8	1.3
35	21.9	0.0
40	116.6	0.0
41	21.4	0.0
43	24.0	0.0
48	20.4	0.0
52	54.6	0.0
56	.2	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	235.9	0.0
5	304.5	50.7
14	427.4	1021.8
19	2329.4	113.9
20	9.6	0.0
21	445.7	0.0
22	.6	0.0
27	19.8	51.8
38	106.6	0.0
39	15.1	0.0
42	121.5	0.0
46	890.2	0.0
47	1577.7	0.0
49	6.2	0.0
50	1020.2	0.0
51	******	0.0
52	******	0.0
54	******	0.0
55	6.8	0.0

B

	RTK (1)	BMP (3)	BRDM (5)	MP SAG (4)	100 AT (9)	23/4 (11)	ARTY (16)	73RR (10)	GRAIL (13)	HIND (15)	INF, RPG (7)
B TK (1)	4.5 / 4.9	5.6 / 2.9	0.2 / 1.4		0.3	0.3	0.1	0.1		0.3	
TOW APC (5)	4.5 / 0.8	4.9 / 0.3	0.5 / 0.2		0.3 / 0.1			0.1			
DRAGON (8)	3.4 / 0.2	7.2 / 0.6			0.3		0.2	0.1			0.2
ATK HEL (15)	1.0	0.8				0.6 / 1.5			0.2		
ARTY (16)	0.2	0.6			0.2		0.1	0.1			
INF, LAW (7)	0.3										
IFV (6)	5.3 / 0.8	9.3 / 1.5	0.5 / 0.1		0.6 / 0.3	0.8	0.2	0.1		1.6	
STINGER (13)											
DIVADS (11)										1.3	

B

ITERATIONS = 5
ROOTC = .930

BLUE FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
M TANK	1.000	5.00	5.000
TOW APC	1.552	3.25	5.067
DRAGON	.879	5.40	4.747
ATK HEL	1.008	1.15	1.160
ARTY	.021	22.95	.479
INF	.016	12.00	.197
IFV	2.027	3.75	7.528
STINGER	0.000	1.00	0.000
DIVADS	2.924	1.00	2.924

TOTAL FORCE VALUE = 27.100

TOTAL INITIAL FORCE VALUE = 39.172

RED FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
M TANK	.705	10.45	7.372
BMP	.342	18.75	6.421
BROM	.757	2.35	1.778
MR TAG	0.000	2.00	0.000
120 AT	.729	1.35	.984
2S9	.996	3.15	1.405
ARTY	.022	31.00	.632
73MM	.225	1.90	.429
GRAIL	.013	15.00	.188
INF	.035	27.00	.163
MIRV	1.419	1.35	3.265

TOTAL FORCE VALUE = 22.434

TOTAL INITIAL FORCE VALUE = 37.191

INITIAL FORCE RATIO = 1.053

SUMMARY OF TREATMENT3301 C 06/26/78
NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.8	0.0	0.0	0.0	.6	0.0	0.0	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.5	0.0	0.0	0.0	.6	0.0	.3	0.0	.1	0.0	0.0	0.0
7	.2	.1	.4	.1	.3	0.0	0.0	0.0	1.0	0.0	.1	0.0	.2	0.0	0.0	0.0
8	.4	.1	.3	.1	.4	0.0	0.0	0.0	.9	0.0	.4	0.0	0.0	0.0	.2	.1
13	16.4	5.5	20.6	5.4	0.0	0.0	1.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	1.9	.6	0.0	0.0	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0	.2	.1
35	11.2	3.7	14.3	4.3	0.0	0.0	1.2	.4	0.0	0.0	.2	.1	0.0	0.0	0.0	0.0
40	0.0	0.0	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	14.8	4.9	22.1	6.6	0.0	0.0	1.6	.5	0.0	0.0	.2	.1	0.0	0.0	1.0	.3
48	2.4	.8	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	.4
TOTALS	45.4	15.1	60.3	17.3	1.9	0.0	4.2	1.4	3.1	0.0	1.2	.1	.4	0.0	2.6	.9

	CLASS 13		CLASS 15	
	MEN	VEH	MEN	VEH
1	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0
7	.5	0.0	0.0	0.0
8	.3	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0
28	0.0	0.0	.4	.2
34	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0
TOTALS	.9	0.0	.4	.2

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES															
	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 13		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	.5	0.0	.1	0.0	0.0	0.0	0.0	0.0
5	.4	.1	.4	.2	0.0	0.0	3.1	0.0	.6	0.0	.1	0.0	0.0	0.0	.4	.1
6	.2	.1	0.0	0.0	.4	.1	1.5	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0
14	10.0	3.3	.4	.2	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	1.2	0.0	0.0
27	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	5.6	1.9	.1	.1	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	2.4	.8	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
TOTALS	19.0	6.3	1.1	.5	1.7	.4	6.4	0.0	1.2	0.0	.5	0.0	2.5	1.3	.4	.1

FIFL

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS — RED TARGET CLASSES

	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	1.7	0.0	0.0	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	1.1	0.0	.2	0.0	.1	0.0	0.0	0.0
7	.6	.1	1.3	.1	.4	0.0	0.0	0.0	3.9	0.0	.1	0.0	.2	0.0	0.0	0.0
8	1.1	.1	1.1	.1	.8	0.0	0.0	0.0	1.4	0.0	.4	0.0	0.0	0.0	.6	.1
13	57.7	6.4	109.4	7.5	0.0	0.0	2.1	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	5.6	.5	0.0	0.0	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	.6	.1
35	43.0	4.8	85.1	7.2	0.0	0.0	2.3	.3	0.0	0.0	.6	.1	0.0	0.0	0.0	0.0
40	0.0	0.0	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	44.3	4.9	50.2	4.1	0.0	0.0	2.4	.3	0.0	0.0	.6	.1	0.0	0.0	3.4	.4
48	4.1	.5	1.7	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	.3

	CLASS 13		CLASS 15	
	MEN	VEH	MEN	VEH
1	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0
7	.7	0.0	0.0	0.0
8	1.1	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0
28	0.0	0.0	.7	.2
34	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS — BLUE TARGET CLASSES

	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 13		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	.6	0.0	.1	0.0	0.0	0.0	0.0	0.0
5	1.1	.1	.7	.2	0.0	0.0	1.6	0.0	.7	0.0	.1	0.0	0.0	0.0	2.4	.1
6	.6	.1	0.0	0.0	1.1	.1	2.1	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0
14	30.4	3.4	.7	.2	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	.5	0.0	0.0
27	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	24.3	2.7	.3	.1	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	14.4	1.6	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	18.8	0.0
2	23.2	0.0
7	44.8	1.6
8	26.4	1.1
13	36.3	54.9
28	.8	0.0
32	.7	1.5
34	19.3	1.2
35	30.1	0.0
40	.5	0.0
43	44.2	0.0
48	3.6	0.0
56	.1	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	87.2	0.0
5	224.8	0.0
6	72.0	0.0
12	40.8	0.0
14	82.8	44.1
19	19.3	0.0
20	5.6	0.0
21	38.4	0.0
22	.7	0.0
27	1.9	2.6
38	75.9	0.0
39	17.7	0.0
46	16.4	0.0
47	.1	0.0
49	2.3	0.0
55	1.3	0.0

BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	14.7	0.0
2	27.9	0.0
7	30.2	17.8
8	36.1	7.9
13	207.5	343.2
28	2.7	0.0
32	6.7	0.3
34	234.1	21.6
35	23.3	0.0
40	.8	0.0
43	56.6	0.0
48	1.8	0.0
56	.1	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	76.5	0.0
5	71.3	0.0
14	449.7	294.8
19	189.4	0.0
20	28.1	0.0
21	683.0	0.0
22	2.1	0.0
27	8.6	9.4
38	333.8	0.0
39	6.8	0.0
46	167.5	0.0
47	.3	0.0
49	.8	0.0
55	6.1	0.0

C

	RTK (1)	BMP (3)	BRDM (5)	MP SAG (4)	100AT (9)	23/4 (11)	ARTY (16)	73RR (10)	GRAIL (13)	HIND (15)	INF, RPG (7)
B TK (1)	5.5 / 3.3	6.0 / 1.9	0.4 / 0.8		0.1	0.1	0.2				
TOW APC (5)	3.7 / 0.2	4.3 / 0.1	0.4 / 0.1		0.1		0.2				
DRAGON (8)		0.1									
ATK HEL (15)	0.8	0.1				0.4 / 1.2			0.1		
ARTY (16)	0.2	0.2				0.1	0.1				
INF, LAW (7)											
IFV (6)	4.9 / 0.1	6.6 / 0.1	0.5		0.1	0.3	0.1				
STINGER (13)											
DIVADS (11)										0.2	

C

ITERATIONS = 7
RJOTC = 1.712

BLUE FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
B TANK	1.000	6.85	6.850
TOW APC	1.279	3.75	4.796
DRAGON	.004	6.00	.026
ATK HEL	.752	1.35	1.015
ARTY	.013	22.95	.299
INF	0.000	12.00	0.000
IFV	1.167	5.80	6.768
STINGER	0.000	1.00	0.000
DIVADS	0.000	1.00	0.000
	TOTAL FORCE VALUE =		19.754
	TOTAL INITIAL FORCE VALUE =		23.947

RED FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
R TANK	.505	12.45	6.297
BMP	.151	24.75	3.671
BRDM	.691	2.30	1.589
MP SAG	0.000	2.00	0.000
100 AT	.088	1.95	.171
23/4	.435	3.55	1.545
ARTY	.032	31.00	.982
7339	0.000	2.00	0.000
GRAIL	.009	13.00	.129
INF	0.000	27.00	0.000
HIND	0.000	1.90	0.000
	TOTAL FORCE VALUE =		14.573
	TOTAL INITIAL FORCE VALUE =		20.173
	INITIAL FORCE RATIO =		1.187

Simulation Results
3301D

The following set of simulation results reflect the outcome of the first of the BSID amended option series: inserting only the T72 into the COMCAP II Base Case Scenario. Thus 20 T72 tanks replaced the 20 T62 tanks of the Base Case. All other parameters remaining unchanged.

SUMMARY OF TREATMENT 3301 D — 12/09/78
NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	.2	0.0	.1	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	.4	0.0	.3	0.0	.2	0.0	0.0	0.0
13	2.0	.7	20.8	5.2	.1	0.0	.2	.1	0.0	0.0	.1	0.0	0.0	0.0	.4	.1
35	11.2	3.7	16.7	5.0	0.0	0.0	.4	.1	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0
36	4.0	1.3	1.3	.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	.5
40	9.6	3.2	4.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0
41	3.2	1.1	.5	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	30.0	10.0	43.7	12.5	1.1	0.0	.6	.2	2.1	0.0	1.0	.1	.2	0.0	2.2	.7

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0
2	0.0	0.0	.1	0.0
13	0.0	0.0	0.0	0.0
35	.2	.1	0.0	0.0
36	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0
52	0.0	0.0	.4	.4
54	0.0	0.0	0.0	0.0
TOTALS	.2	.1	.5	.4

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES											
	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	1.1	.2	0.0	0.0
5	0.0	0.0	0.0	0.0	.1	.1	5.1	0.0	.5	.1	0.0	0.0
6	.2	.1	0.0	0.0	0.0	0.0	1.3	0.0	.3	0.0	0.0	0.0
14	13.2	4.4	3.2	1.2	0.0	0.0	7.2	0.0	5.3	3.1	0.0	0.0
19	.2	.1	.5	.3	0.0	0.0	1.0	0.0	2.4	1.3	0.0	0.0
20	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	1.2
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.5	.3
27	.3	.3	.3	.1	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
37	2.4	.8	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	10.2	3.4	.4	.2	0.0	0.0	0.0	0.0	.7	.3	0.0	0.0
39	3.0	1.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
46	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
47	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	.1	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	.7	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.1	0.1	0.1	1.0	.3	0.0	.1	.1	0.0	0.0

54	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1
TOTALS	30.0	10.0	5.1	2.5	.1	.1	20.0	0.0	10.9	5.3	3.1	1.5

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS — RED TARGET CLASSES

	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.3	0.0	.1	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	.8	0.0	.2	0.0	.2	0.0	0.0	0.0
13	7.3	.8	29.6	7.2	.1	0.0	.6	.1	0.0	0.0	.1	0.0	0.0	0.0	2.4	.3
35	53.3	5.9	36.1	3.6	0.0	0.0	1.1	.1	0.0	0.0	1.1	.1	0.0	0.0	0.0	0.0
36	9.9	1.1	3.7	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	.7
40	53.0	5.9	12.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1.1	.1	0.0	0.0	0.0	0.0
41	5.7	.6	1.9	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	.9	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0
2	0.0	0.0	.1	0.0
13	0.0	0.0	0.0	0.0
35	.6	.1	0.0	0.0
36	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0
52	0.0	0.0	.4	.4
54	0.0	0.0	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS — BLUE TARGET CLASSES

	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	.6	.2	0.0	0.0
5	0.0	0.0	0.0	0.1	.1	.1	5.1	0.0	.8	.1	0.0	0.0
6	.6	.1	0.0	0.0	0.0	0.0	.8	0.0	.2	0.0	0.0	0.0
14	22.3	2.5	1.3	.8	0.0	0.0	25.3	0.0	5.2	1.7	0.0	0.0
19	.6	.1	.9	.2	0.0	0.0	1.1	0.0	3.1	.9	0.0	0.0
20	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	.6
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.9	.2
27	5.7	.6	.3	.1	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0
37	5.4	.6	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	29.3	3.3	.7	.2	0.0	0.0	0.0	0.0	1.0	.2	0.0	0.0
39	9.0	1.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0

46	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0
47	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	.1	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	.5	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	.4	0.0	.3	.1	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	.3	.1	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	.6	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	53.2	0.0
2	39.5	0.0
13	5.1	40.0
29	1.7	0.0
35	33.7	0.0
36	7.9	0.0
40	39.3	0.0
41	48.0	0.0
45	10.0	0.0
52	120.6	0.0
54	18.6	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	127.2	0.0
5	233.6	0.6
6	72.0	0.0
12	40.0	0.0
14	75.0	136.2
19	126.2	0.4
20	7.1	0.0
21	75.2	0.0
22	1.5	0.0
25	20.4	0.0
26	4.4	0.0
27	6.5	8.9
37	14.3	0.0
38	86.3	0.0
39	15.6	0.0
42	17.8	0.0
46	69.3	0.0
47	289.3	0.0
50	176.0	0.0
51	330.4	0.0
52	270.4	0.0
54	135.2	0.0
55	6.2	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
5	127.2	0.0
6	233.6	0.6
8	72.0	0.0
12	40.9	0.0
14	75.0	136.9
19	126.2	4.4
20	7.1	0.0
21	75.2	0.0
22	1.5	0.0
23	20.4	0.0
26	4.4	0.0
27	6.5	8.9
37	19.3	0.0
38	86.3	0.0
39	15.6	0.0
42	17.8	0.0
46	69.3	0.0
47	289.5	0.0
50	176.0	0.0
51	330.4	0.0
52	270.4	0.0
54	135.2	0.0
55	6.2	0.0

BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	19.9	0.0
2	40.8	0.0
15	12.8	230.0
22	.8	0.0
35	12.8	0.0
36	15.6	0.0
40	82.2	0.0
45	84.0	0.0
52	4081.1	0.0
54	531.4	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	242.7	0.0
5	161.8	45.3
14	984.0	1983.1
19	3088.9	62.9
20	25.1	0.0
21	914.7	0.0
22	2.0	0.0
25	569.8	0.0
26	51.5	0.0
27	17.1	41.2
37	16.2	0.0
38	177.5	0.0
39	24.5	0.0
42	225.6	0.0
46	307.2	0.0
47	******	0.0
50	******	0.0
51	******	0.0
52	******	0.0
54	******	0.0
55	61.0	0.0

D

	RTK (1)	BMP (3)	BRDM (5)	MP SAG (4)	100 AT (9)	23/4 (11)	ARTY (16)	73RR (10)	GRAIL (13)	57 AD (12)	INF RPG (7)
B TK (1)	0.7 / 4.4	5.3 / 3.5	0.1 / 1.0	/ 0.8	/ 0.3	0.1 /	/ 0.1	/	/	/	/
TOW APC (5)	3.7 / 1.6	5.0 / 0.6	0.1 / 0.1	/ 0.1	0.1 / 0.1	/	/	/ 0.1	/	0.1 /	/
DRAGON (8)	3.2 / 3.1	1.5 / 1.8	/ 0.1	/	0.1 /	/	/ 0.3	/ 0.1	/	/	/ 0.2
ATK HEL (15)	1.3 /	0.5 /	/	/	/	0.6 / 1.2	/	/	/ 0.1	/ 0.3	/
ARTY (16)	/	/	/	/	/	/	/	/	/	/	/
INF, LAW (7)	1.1 /	0.2 /	/	/	/	/	/	/	0.4 /	/	/
APC (6)	/	/	/	/	/	/	/ 0.1	/	/	/	/

D

ITERATION = [illegible]
PROB = [illegible]

[illegible] DATA

WPN	VALUE	WPNS	TOTAL VALUE
[illegible]	[illegible]	[illegible]	[illegible]
IFV APC	3.108	2.75	10.735
[illegible]	[illegible]	[illegible]	[illegible]
ATK HEL	3.189	1.25	3.985
[illegible]	[illegible]	[illegible]	[illegible]
INF	.145	12.00	2.335
IFV	0.000	5.75	0.000

TOTAL FORCE VALUE = [illegible]

TOTAL INITIAL FORCE VALUE = 47.351

RED FORCE DATA

WPN	VALUE	WPNS	TOTAL VALUE
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	.[illegible]	26.75	[illegible]
[illegible]	.727	5.50	[illegible]
MBT [illegible]	.779	1.00	1.558
[illegible]	[illegible]	[illegible]	.03
2S19	1.[illegible]21	[illegible].55	[illegible].206
[illegible]	.[illegible]30	31.00	[illegible]
[illegible]	.[illegible]00	[illegible].00	.[illegible]00
[illegible]	.[illegible]	19.[illegible]0	[illegible].317
57 AD	.[illegible]29	[illegible].25	1.[illegible]51
[illegible]	.[illegible]01	[illegible].00	.[illegible]77

TOTAL [illegible] VALUE = [illegible]

TOTAL INITIAL [illegible] VALUE = [illegible]

INITIAL FORCE RATIO = [illegible]

Simulation Results
3301E

The following set of simulation results reflect the outcome of the second of the BSID amended option series: inserting only the XM1 into the COMCAP II Base Case Scenario. Thus, 10 XM1 tanks replaced the 10 M60A3 tanks of the Base Case. All other parameters remained unchanged.

SUMMARY OF TREATMENT3301E 12/05/78
NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 11		CLASS 12	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.6	.3	0.0	0.0	.6	0.0	.1	0.0	0.0	0.0	.2	0.0
2	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	1.7	0.0	.7	0.0	0.0	0.0	.1	0.0
13	17.8	5.9	56.0	19.6	.2	.1	.8	.3	1.5	0.0	.8	.1	1.0	.3	0.0	0.0
34	0.0	0.0	6.1	2.1	.7	.1	1.4	.5	0.0	0.0	0.0	0.0	.2	.1	.2	0.0
35	16.6	5.5	13.5	4.2	.2	.1	.4	.1	0.0	0.0	.7	.3	0.0	0.0	0.0	0.0
36	5.6	1.9	.9	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	.3	0.0	0.0
40	11.2	3.7	7.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	.5	.1	0.0	0.0	0.0	0.0
41	.8	.3	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	52.0	17.3	84.3	23.9	2.0	.7	2.6	.9	4.3	0.0	2.9	.5	2.0	.7	.5	0.0

	CLASS 13	
	MEN	VEH
1	.1	0.0
2	.1	0.0
13	0.0	0.0
34	0.0	0.0
35	0.0	0.0
36	0.0	0.0
40	0.0	0.0
41	0.0	0.0
52	.1	.1
54	0.0	0.0
TOTALS	.3	.1

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES													
	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	.6	.1	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	.1	.1	3.7	0.0	.3	0.0	0.0	0.0	.4	.1
6	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	.3	.1	0.0	0.0	0.0	0.0
14	7.4	2.5	.9	.5	0.0	0.0	1.9	0.0	1.6	.9	0.0	0.0	0.0	0.0
19	.6	.2	.4	.2	0.0	0.0	.9	0.0	2.8	1.7	0.0	0.0	0.0	0.0
20	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	1.2	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	.4	0.0	0.0
27	2.2	.7	.4	.2	0.0	0.0	.3	0.0	.1	0.0	0.0	0.0	0.0	0.0
37	5.4	1.8	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	7.4	2.5	.7	.3	0.0	0.0	0.0	0.0	.5	.3	0.0	0.0	0.0	0.0
39	5.6	1.9	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	.1	.1	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	.5	0.0	.1	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	.1	0.0	0.0	.1	0.0	.2	0.0	0.0	0.0	0.0	0.0

TOTALS	29.0	9.7	3.1	1.5	.1	.1	12.6	0.0	6.7	3.1	3.2	1.6	.9	.1

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES													
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 11		CLASS 12	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.5	.5	0.0	0.0	1.0	0.0	.1	0.0	0.0	0.0	.3	0.0
2	0.0	0.0	0.0	0.0	.9	0.0	0.0	0.0	2.4	0.0	.7	0.0	0.0	0.0	.1	0.0
13	98.2	5.4	486.0	29.1	.3	.3	1.9	.2	15.1	0.0	.7	.1	4.7	.5	0.0	0.0
34	0.0	0.0	16.2	1.5	1.4	.3	3.7	.4	0.0	0.0	0.0	0.0	.5	.1	.3	0.0
35	55.1	6.1	90.6	7.6	.3	.1	1.1	.1	0.0	0.0	2.4	.2	0.0	0.0	0.0	0.0
36	17.8	2.0	3.2	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	.4	0.0	0.0
40	39.2	4.4	32.7	4.1	0.0	0.0	0.0	0.0	0.0	0.0	2.0	.1	0.0	0.0	0.0	0.0
41	3.2	.4	.5	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	CLASS 13	
	MEN	VEH
1	.1	0.0
2	.1	0.0
13	0.0	0.0
34	0.0	0.0
35	0.0	0.0
36	0.0	0.0
40	0.0	0.0
41	0.0	0.0
52	.1	.1
54	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES													
	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	.4	.1	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	.1	.1	9.1	0.0	.2	0.0	0.0	0.0	2.4	.1
6	0.0	0.0	0.0	0.0	0.0	0.0	.5	0.0	.4	.1	0.0	0.0	0.0	0.0
14	17.0	2.0	1.1	.3	0.0	0.0	6.8	0.0	1.4	.4	0.0	0.0	0.0	0.0
19	1.5	.2	.7	.2	0.0	0.0	2.6	0.0	5.5	1.7	0.0	0.0	0.0	0.0
20	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	.3	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	.4	0.0	0.0
27	8.3	.9	.7	.2	0.0	0.0	1.1	0.0	.1	0.0	0.0	0.0	0.0	0.0
37	14.4	1.5	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	8.8	1.0	1.0	.2	0.0	0.0	0.0	0.0	.7	.2	0.0	0.0	0.0	0.0
39	7.5	.8	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	.5	.1	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	.1	0.0	0.0	0.0	0.0	0.0

52	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	.3	.1	0.0	0.0	0.0	0.0

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	53.6	0.0
2	45.3	0.0
11	16.2	01.1
29	1.3	0.0
31	68.7	29.7
35	38.5	0.0
36	6.1	0.0
40	46.6	0.0
41	41.6	0.0
50	.4	0.0
52	118.6	0.0
54	15.4	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	130.9	0.0
5	236.8	0.8
9	72.0	0.0
12	40.0	0.0
14	72.3	191.7
19	147.1	5.0
20	8.9	0.0
21	83.2	0.0
22	1.7	0.0
25	26.9	0.0
26	5.9	0.0
27	9.9	10.3
37	15.9	0.0
38	85.9	0.0
39	19.1	0.0
42	17.9	0.0
46	52.8	0.0
47	174.5	0.0
50	113.8	0.0
51	357.9	0.0
52	296.9	0.0
54	96.2	0.0
55	2.0	0.0

BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	12.7	0.0
2	161.5	0.0
13	25.7	441.5
29	.5	0.0
30	1207.2	174.2
35	7.3	0.0
36	7.3	0.0
40	135.7	0.0
41	115.0	0.0
50	2.4	0.0
52	2733.3	0.0
54	541.0	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	285.3	0.0
5	277.0	30.2
14	424.7	1211.8
19	2548.9	137.6
20	17.1	0.0
21	2725.0	0.0
22	4.6	0.0
25	369.3	0.0
26	50.7	0.0
27	21.3	37.0
37	11.8	0.0
38	174.3	0.0
39	7.3	0.0
42	128.8	0.0
46	675.9	0.0
47	8078.0	0.0
50	******	0.0
51	******	0.0
52	******	0.0
54	******	0.0
55	7.3	0.0

E

	R TK (1)	BMP (3)	BRDM (5)	MP SAG (4)	100 AT (9)	23/4 (11)	ARTY (16)	73 RR (14)	GRAIL (13)	57 AD (12)	INF RPG (7)
B TK (1)	5.9 / 2.5	16.7 / 2.7	0.8 / 1.9	0.2 / 1.8	0.1 / 0.7	0.4		0.1			
TOW APC (5)	5.5 / 0.6	4.2 / 0.5	0.1 / 0.1	0.1 / 0.1	0.3 / 0.2						
DRAGON (8)	3.7 / 0.9	2.7 / 2.0			0.1		0.2				0.1
ATK HEL (15)	1.9	0.3				0.3 / 1.2				0.4	
ARTY (16)				0.3			0.1				
INF, LAW (7)	0.3	0.1							0.1		
APC (6)							0.1				

E

ITERATION = 4
RATIO = .909

RED FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
B-52S	1.000	5.15	5.150
IRW MRC	.760	3.25	2.437
FTR-ION	.327	4.45	1.456
AIR-AIR	.474	1.20	.593
ARTY	.019	27.95	.513
INF	.005	12.00	.075
TRV	0.000	.95	0.000

TOTAL FORCE VALUE = 10.044

TOTAL INITIAL FORCE VALUE = 14.354

BLU FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
F-15MW	.279	11.35	3.110
BMP	.170	21.05	3.575
PT-76	.762	2.35	1.793
MP-38S	1.000	1.65	1.797
100-AT	.[illegible]	1.75	.315
23/4	.100	3.65	.369
ARTY	.002	31.00	.059
330	.038	2.00	.075
M-ATL	1.000	14.75	3.000
SA-AD	.063	3.00	.189
TRV	.001	2.00	.001

TOTAL FORCE VALUE = 17.134

TOTAL INITIAL FORCE VALUE = 17.535

INITIAL FORCE RATIO = .977

Simulation Results
3301F

The following set of simulation results reflect the outcome of the third of the BSID amended option series: inserting both the T72 tanks and the XM1 tanks into the COMCAP II Base Case Scenario. Thus, 20 T72 tanks and 10 XM1 tanks replaced 20 T62 and 10 M60A3 tanks, respectively, of the Base Case. All other parameters remained unchanged.

SUMMARY OF TREATMENT 3301 F 11/22/78
NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.6	0.0	0.0	0.0	1.1	0.0	.1	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.5	0.0	0.0	0.0	1.9	0.0	.2	0.0	.1	0.0	0.0	0.0
13	7.0	2.3	35.0	9.0	0.0	0.0	.6	.2	0.0	0.0	.1	0.0	0.0	0.0	.4	.1
34	0.0	0.0	4.2	1.5	.4	0.0	.6	.2	0.0	0.0	.1	0.0	0.0	0.0	.4	.1
35	11.2	3.7	13.0	4.0	0.0	0.0	.4	.1	0.0	0.0	.5	.1	0.0	0.0	0.0	0.0
36	4.6	1.5	1.6	.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	.1
40	17.8	5.9	7.3	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	3.4	1.1	.8	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.7	0.0	.3	.1	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	44.0	14.7	61.9	18.0	1.5	0.0	1.6	.5	3.9	0.0	1.3	.2	.1	0.0	1.2	.4

	CLASS 13	
	MEN	VEH
1	.1	0.0
2	.2	0.0
13	0.0	0.0
34	0.0	0.0
35	0.0	0.0
36	0.0	0.0
40	0.0	0.0
41	0.0	0.0
52	.2	.2
54	0.0	0.0
TOTALS	.5	.2

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES									
	CLASS 1		CLASS 5		CLASS 7		CLASS 8		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	2.4	0.0	.6	.1	0.0	0.0
5	.6	.2	0.0	0.0	4.1	0.0	.5	.1	0.0	0.0
6	0.0	0.0	0.0	0.0	1.3	0.0	.2	0.0	0.0	0.0
14	13.6	4.5	3.7	1.9	3.2	0.0	1.8	.5	0.0	0.0
19	.4	.1	.3	.1	.7	0.0	3.5	1.9	0.0	0.0
20	.2	.1	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.7	.3
27	1.0	.3	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
37	2.2	.7	.4	.2	0.0	0.0	0.0	0.0	0.0	0.0
38	8.2	2.7	.4	.2	0.0	0.0	.7	.4	0.0	0.0
39	3.6	1.2	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
45	.2	.1	0.0	0.0	.1	0.0	.4	.2	0.0	0.0
47	0.0	0.0	0.0	0.0	.5	0.0	.8	.7	0.0	0.0
50	0.0	0.0	0.0	0.0	.3	0.0	.1	.1	0.0	0.0
51	0.0	0.0	0.0	0.0	.3	0.0	.3	.1	0.0	0.0
52	0.0	0.0	0.0	0.0	1.0	0.0	.1	.1	0.0	0.0
54	0.0	0.0	0.0	0.0	.6	0.0	.1	0.0	0.0	0.0

55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1
TOTALS	30.0	10.0	5.5	2.7	14.5	0.0	9.0	4.1	2.8	1.4

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	2.3	0.0	.3	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.8	0.0	0.0	0.0	6.4	0.0	.2	0.0	.1	0.0	0.0	0.0
13	43.3	4.8	294.6	20.3	0.0	0.0	1.5	.2	0.0	0.0	.3	0.0	0.0	0.0	2.4	.3
34	0.0	0.0	14.0	1.7	.5	0.0	1.5	.2	0.0	0.0	.1	0.0	0.0	0.0	1.1	.1
35	25.0	2.8	36.1	3.6	0.0	0.0	1.1	.1	0.0	0.0	1.6	.1	0.0	0.0	0.0	0.0
36	16.5	1.8	3.4	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	.1
40	25.0	2.8	31.2	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	8.8	1.0	1.5	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	1.1	.1	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	CLASS 13	
	MEN	VEH
1	.1	0.0
2	.2	0.0
13	0.0	0.0
34	0.0	0.0
35	0.0	0.0
36	0.0	0.0
40	0.0	0.0
41	0.0	0.0
52	.3	.3
54	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES									
	CLASS 1		CLASS 5		CLASS 7		CLASS 8		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	2.4	0.0	.4	.1	0.0	0.0
5	1.3	.2	0.0	0.0	4.6	0.0	.4	.1	0.0	0.0
6	0.0	0.0	0.0	0.0	1.5	0.0	.2	0.0	0.0	0.0
14	11.4	1.3	3.4	.8	7.7	0.0	1.5	.4	0.0	0.0
19	2.4	.3	.5	.1	.5	0.0	4.3	1.1	0.0	0.0
20	.6	.1	.5	.1	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	.4
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	.2
27	2.1	.2	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
37	5.7	.6	.7	.2	0.0	0.0	0.0	0.0	0.0	0.0
38	14.7	1.6	.7	.2	0.0	0.0	1.9	.4	0.0	0.0
39	9.1	.3	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
40	.6	.1	0.0	0.0	.1	0.0	.3	.2	0.0	0.0

52	0.0	0.0	0.0	0.0	3.1	0.0	.3	.1	0.0	0.0
54	0.0	0.0	0.0	0.0	2.1	0.0	.1	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	55.2	0.0
2	39.5	0.0
13	7.8	35.8
29	1.3	0.0
34	37.1	14.7
35	32.6	0.0
36	7.5	0.0
40	51.5	0.0
41	48.0	0.0
52	134.2	0.0
54	33.6	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	121.6	0.0
5	226.4	8.8
6	72.0	0.0
12	40.0	0.0
14	49.9	137.0
19	134.9	1.3
20	10.0	0.0
21	68.0	0.0
22	1.3	0.0
25	24.0	0.0
26	2.0	0.0
27	3.5	11.8
37	13.2	0.0
38	84.6	0.0
39	14.1	0.0
42	22.2	0.0
46	55.3	0.0
47	247.9	0.0
50	211.0	0.0
51	351.7	0.0
52	389.9	0.0
54	243.5	0.0
55	6.6	0.0

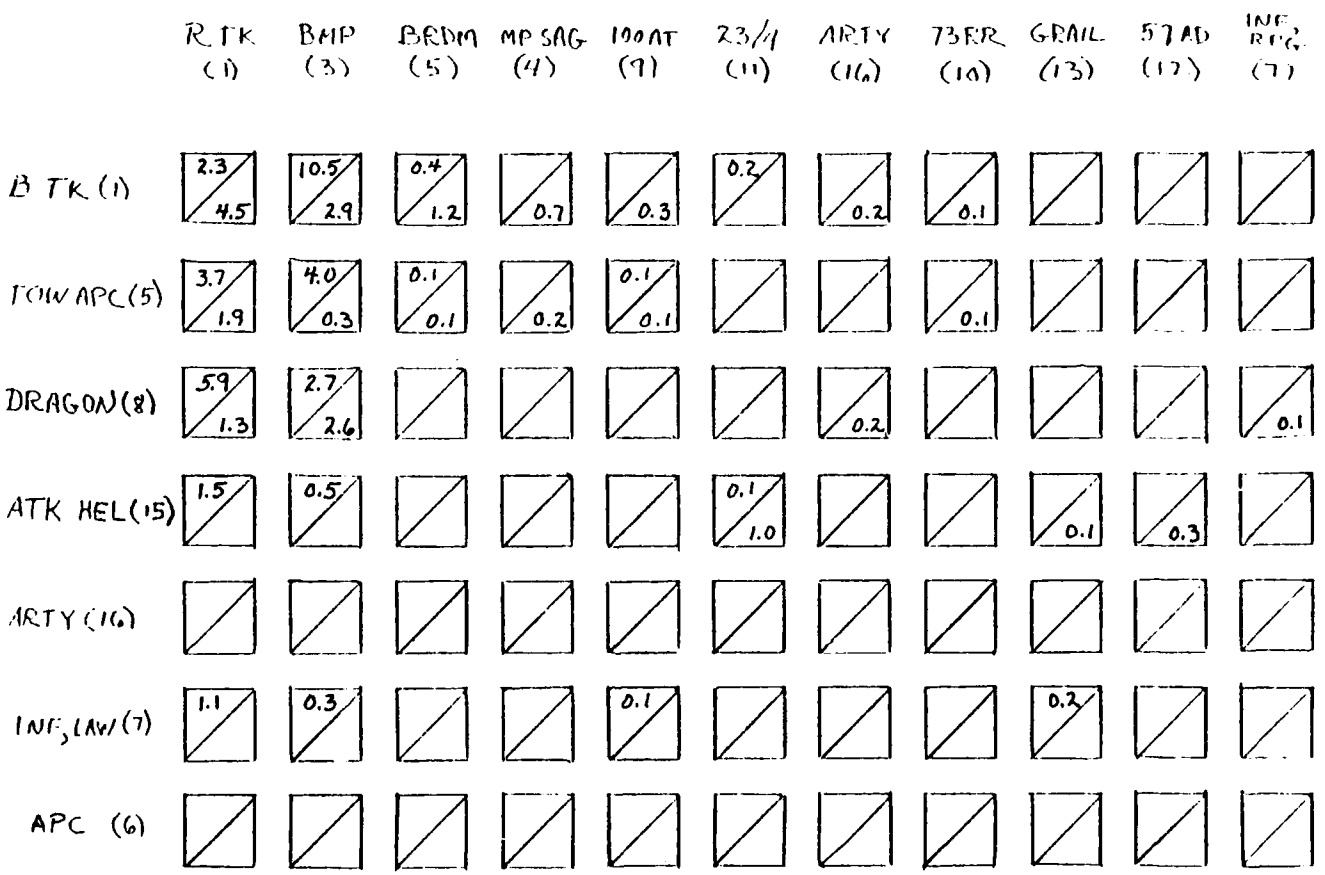
BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	6.2	0.0
2	59.1	0.0
13	42.3	107.6
29	1.2	0.0
34	239.9	115.2
35	10.3	0.0
36	11.7	0.0
40	114.1	0.0
52	3414.2	0.0
54	1179.1	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	223.5	0.0
5	100.1	50.7
14	273.4	1005.0
19	2293.0	26.7
20	14.3	0.0
21	1885.7	0.0
22	2.4	0.0
25	540.0	0.0
26	11.3	0.0
27	7.0	47.2
37	21.6	0.0
38	173.7	0.0
39	23.1	0.0
42	84.6	0.0
46	855.8	0.0
47	******	0.0
50	******	0.0
51	******	0.0
52	******	0.0
54	******	0.0
55	24.7	0.0

F


R TK (1)
BMP (3)
BRDM (5)
MP SAG (4)
100 AT (9)
23/4 (11)
ARTY (16)
73 ER (14)
GRAIL (13)
57 AD (12)
INF RIFL (7)
B TK (1)
2.3 / 4.5
10.5 / 2.9
0.4 / 1.2
0.7
0.3
0.2
0.2
0.1
TOW APC (5)
3.7 / 1.9
4.0 / 0.3
0.1 / 0.1
0.2
0.1 / 0.1
0.1
DRAGON (8)
5.9 / 1.3
2.7 / 2.6
0.2
0.1
ATK HEL (15)
1.5
0.5
0.1 / 1.0
0.1
0.3
ARTY (16)
INF, LAW (7)
1.1
0.3
0.1
0.2
APC (6)

F

ITERATIONS [illegible]
SCORE = 1.017

BLUE FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
B TANK	1.000	5.00	5.000
[illegible]	[illegible]	[illegible]	[illegible]
DRAGON	1.301	3.95	5.140
[illegible]	[illegible]	[illegible]	[illegible]
ARTY	0.000	23.00	0.000
INF	.077	15.00	.925
IFV	0.000	6.00	0.000

TOTAL FORCE VALUE = 16.312

TOTAL INITIAL FORCE VALUE = 26.690

RED FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
B TANK	.725	12.65	9.188
[illegible]	[illegible]	[illegible]	[illegible]
RPOM	.139	9.75	1.372
[illegible]	[illegible]	[illegible]	[illegible]
100 AT	.391	1.30	.357
[illegible]	[illegible]	[illegible]	[illegible]
ARTY	.015	51.00	.459
[illegible]	[illegible]	[illegible]	[illegible]
GRAIL	.007	15.00	.100
[illegible]	[illegible]	[illegible]	[illegible]
INF	.005	27.00	.132

TOTAL FORCE VALUE = 21.139

TOTAL INITIAL FORCE VALUE = [illegible]

INITIAL FORCE RATIO = [illegible] .15

Simulation Results
3301G G*

The following two sets of simulation results reflect the outcomes of two variations on the fourth of the BSID amended option series. Both sets include the following insertions into the Base Case. The T72 tanks and the improved Sagger missiles are inserted on the Red side. On the Blue side, the ITV and IFV replace the four TOW-APCs and the six APCs respectively. With these insertions, the variations are as follows. In the G* simulation, the IFV orders are amended to them fully into play. In the G simulation, the orders are amended to bring only four of IFVs into play. This latter variation, in effect, lowers the number of IFVs in the battle to four instead of six.

SUMMARY OF TREATMENT3301 G 12/09/78
NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 2		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	.2	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	1.8	0.0	.4	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	.2	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
13	5.8	1.9	20.4	5.5	0.0	0.0	.2	.1	0.0	0.0	.2	0.0	0.0	0.0	.2	.1
35	18.0	6.0	22.9	7.0	0.0	0.0	.8	.3	0.0	0.0	1.6	.5	0.0	0.0	0.0	0.0
36	3.6	1.2	3.0	.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	.7
40	11.6	3.9	12.8	4.3	0.0	0.0	0.0	0.0	0.0	0.0	.5	.1	0.0	0.0	0.0	0.0
41	1.8	.6	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	10.2	3.4	26.5	8.3	0.0	0.0	.2	.1	0.0	0.0	.9	.3	0.0	0.0	2.2	.7
45	0.0	0.0	.5	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	51.0	17.0	86.3	26.3	.1	0.0	1.2	.4	6.4	0.0	4.0	.9	.1	0.0	4.4	1.5

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	.1	0.0	.1	0.0
2	.2	0.0	.3	0.0
7	0.0	0.0	.3	0.0
8	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
36	.3	.1	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0
52	0.0	0.0	.1	0.0
54	0.0	0.0	0.0	0.0
TOTALS	.6	.1	.8	0.0

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES													
	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	.5	0.0	0.0	0.0	0.0	0.0
5	.3	.1	0.0	0.0	.2	.1	4.7	0.0	.5	0.0	0.0	0.0	.4	.1
6	.2	.1	0.0	0.0	0.0	0.0	.7	0.0	.3	0.0	0.0	0.0	0.0	0.0
14	12.8	4.3	2.3	1.1	3.8	1.3	2.5	0.0	.8	.3	0.0	0.0	0.0	0.0
17	.6	.2	.4	.2	2.2	.7	.4	0.0	1.9	1.1	0.0	0.0	0.0	0.0
20	.4	.1	0.0	0.0	1.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	1.1	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
37	.6	.2	.3	.1	.2	.1	.1	0.0	.1	0.0	0.0	0.0	0.0	0.0
38	3.6	1.2	.8	.4	3.0	1.1	0.0	0.0	1.1	.6	0.0	0.0	0.0	0.0
39	2.4	2.5	.4	.2	.4	.1	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0

46	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	.1	.1	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	.5	0.0	.8	.3	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	.3	.2	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	.2	.1	0.0	0.0	0.0	0.0
TOTALS	30.0	10.0	4.1	2.1	11.2	3.7	13.3	0.0	6.7	2.9	2.4	1.2	.4	.1

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS — RED TARGET CLASSES

	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	.2	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	4.0	0.0	.4	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.3	0.0	.3	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
13	21.2	2.4	175.3	11.4	0.0	0.0	.6	.1	0.0	0.0	.2	0.0	0.0	0.0	.6	.1
35	35.0	4.0	33.6	4.6	0.0	0.0	1.9	.2	0.0	0.0	3.4	.3	0.0	0.0	0.0	0.0
36	9.3	1.0	12.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	.7
40	32.0	3.6	61.2	6.5	0.0	0.0	0.0	0.0	0.0	0.0	1.6	.1	0.0	0.0	0.0	0.0
41	4.9	.5	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	25.5	2.8	73.0	5.5	0.0	0.0	.6	.1	0.0	0.0	2.4	.2	0.0	0.0	5.7	.6
45	0.0	0.0	1.3	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	.1	0.0	.1	0.0
2	.6	0.0	.4	0.0
7	0.0	0.0	.4	0.0
8	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
36	.8	.1	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0
52	0.0	0.0	.1	0.0
54	0.0	0.0	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS — BLUE TARGET CLASSES

	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	.3	0.0	0.0	0.0	0.0	0.0
5	.6	.1	0.0	0.0	.6	.1	4.4	0.0	.6	0.0	0.0	0.0	2.4	.1
6	.6	.1	0.0	0.0	0.0	0.0	.8	0.0	.2	0.0	0.0	0.0	0.0	0.0
10	27.6	3.1	2.2	.6	0.3	.2	0.1	0.0	1.6	.5	0.0	0.0	0.0	0.0

20	1.1	.1	0.0	0.0	2.1	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	.6	0.0	0.0	
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0	
27	1.5	.2	.5	.1	.6	.1	.3	0.0	.1	0.0	0.0	0.0	0.0	0.0	
38	21.6	2.4	1.6	.4	7.5	.8	0.0	0.0	2.1	.5	0.0	0.0	0.0	0.0	
39	12.7	1.4	.7	.2	1.1	.1	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0	
46	0.0	0.0	0.0	0.0	0.0	0.0	.4	0.0	.1	.1	0.0	0.0	0.0	0.0	
47	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
50	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
51	0.0	0.0	0.0	0.0	0.0	0.0	.7	0.0	1.5	.4	0.0	0.0	0.0	0.0	
52	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	.5	.2	0.0	0.0	0.0	0.0	
54	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	.3	.1	0.0	0.0	0.0	0.0	

PLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	57.6	0.0
2	60.8	0.0
7	15.6	9.6
8	1.1	0.0
13	10.5	44.2
28	2.0	0.0
32	2.7	0.0
35	35.3	0.0
36	8.8	0.0
40	45.7	0.0
41	41.6	0.0
43	32.5	0.0
45	12.0	0.0
52	140.4	0.0
54	31.7	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	123.6	0.0
5	236.0	7.2
6	72.0	0.0
12	40.0	0.0
14	32.8	24.9
19	119.1	4.1
20	10.4	0.0
21	56.0	0.0
22	1.2	0.0
25	14.4	0.0
26	1.7	0.0
27	4.9	15.6
28	78.1	0.0
39	19.4	0.0
42	21.4	0.0
46	40.0	0.0
47	148.8	0.0
50	106.2	0.0
51	311.1	0.0
53	409.6	0.0
54	236.0	0.0
55	5.9	0.0

BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	9.3	0.0
2	107.9	0.0
7	503.0	230.4
8	17.1	0.0
13	49.3	265.7
28	2.0	0.0
32	24.4	0.0
35	8.2	0.0
36	22.9	0.0
40	104.5	0.0
41	81.8	0.0
43	12.5	0.0
45	161.7	0.0
52	6871.1	0.0
54	1013.5	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	168.7	0.0
5	157.7	37.0
14	88.2	708.4
19	1935.3	44.8
20	9.3	0.0
21	1412.6	0.0
22	2.6	0.0
25	425.8	0.0
26	7.4	0.0
27	14.6	55.3
30	147.7	0.0
33	14.8	0.0
42	120.7	0.0
46	442.1	0.0
47	3649.6	0.0
50	5210.2	0.0
51	******	0.0
53	******	0.0
54	******	0.0
55	52.1	0.0

G

	R TK (1)	BMP (3)	BRDM (5)	MP SAG (4)	100 AT (9)	23/4 (11)	ARTY (16)	73RR (10)	GRAIL (13)	STAD (12)	INF RIFL (7)
B TK (1)	1.9 / 4.3	5.7 / 2.8	0.1 / 2.5		0.2	0.1	0.2	0.1			
TOW APC (5)	6.0 / 1.1	7.0 / 0.6	0.3 / 0.2		0.5 / 0.1						
DRAGON (8)	3.9 / 0.3	4.3 / 2.1	0.1		0.1						0.3
ATK HEL (15)	1.2	0.9				0.7 / 1.1				0.1 / 0.1	
ARTY (16)							0.1				
INF, LAW (7)	0.6	0.1									
IFV (6)	3.4 / 1.3	8.3 / 1.8	0.1 / 0.1		0.3 / 0.1	0.7	0.1	0.3			

G

ITERATIONS = 4
PROTC = .993

BLUE FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
[illegible]	[illegible]	[illegible]	[illegible]
TOW APC	3.357	2.95	9.903
DRAGON	1.311	4.55	5.963
ATK HEL	1.343	1.40	1.908
ARTY	0.000	22.35	0.000
INF	.051	12.00	.606
[illegible]	1.974	[illegible]	[illegible]

TOTAL FORCE VALUE = [illegible]

TOTAL INITIAL FORCE VALUE = [illegible]

RED FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
[illegible]	.936	11.00	10.297
BMD	.881	10.85	10.932
FROG	1.209	3.00	3.641
MR GAS	0.000	0.00	0.000
100 AT	.045	1.15	.721
2S4	.459	3.05	1.474
INFTY	.013	51.00	.681
ZSU	.240	2.00	.481
TRAIL	0.000	15.00	0.000
57 AD	.045	2.85	.134
INF	.014	27.00	.387

TOTAL FORCE VALUE = [illegible]

TOTAL INITIAL FORCE VALUE = [illegible]

INITIAL FORCE RATIO = 1.014

SUMMARY OF TREATMENT 3301 G* 12/30/78
NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11		CLASS 12	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	.9	0.0	.3	0.0	0.0	0.0	.2	0.0
7	0.0	0.0	.2	.1	0.0	0.0	1.9	0.0	.2	0.0	.1	0.0	0.0	0.0	.3	0.0
8	0.0	0.0	.9	.1	0.0	0.0	.1	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	4.2	1.4	21.9	5.7	0.0	0.0	1.8	0.0	.1	0.0	0.0	0.0	1.4	.5	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1
35	16.6	5.5	19.3	5.9	1.0	.3	0.0	0.0	.8	.3	0.0	0.0	0.0	0.0	0.0	0.0
36	4.4	1.5	1.1	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	.3	0.0	0.0
40	12.4	4.1	9.1	3.1	0.0	0.0	0.0	0.0	1.0	.3	0.0	0.0	0.0	0.0	0.0	0.0
41	1.0	.3	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	15.6	5.2	40.7	12.3	1.0	.3	0.0	0.0	1.9	.5	0.0	0.0	.8	.3	0.0	0.0
45	0.0	0.0	.9	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	.5	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	54.2	18.1	93.3	27.7	2.0	.7	10.0	0.0	5.3	1.2	.9	0.0	3.2	1.1	.8	.1

	CLASS 13	
	MEN	VEH
1	.2	0.0
2	.1	0.0
7	.3	0.0
8	.1	0.0
13	0.0	0.0
32	0.0	0.0
35	0.0	0.0
36	0.0	0.0
40	0.0	0.0
41	0.0	0.0
43	0.0	0.0
45	0.0	0.0
52	.3	.2
TOTALS	1.0	.2

2.0
.8
2.8=2.4

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES													
	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	1.3	.1	0.0	0.0	0.0	0.0
5	0.0	0.0	.1	.1	.9	.1	5.4	0.0	.8	0.0	0.0	0.0	.9	.1
6	.2	.1	0.0	0.0	0.0	0.0	1.3	0.0	.3	0.0	0.0	0.0	0.0	0.0
14	9.8	3.3	2.5	1.3	6.0	2.0	.9	0.0	.5	.3	0.0	0.0	0.0	0.0
17	.8	.3	.1	.1	1.8	.6	.4	0.0	1.4	.7	0.0	0.0	0.0	0.0
20	.2	.1	.1	.1	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.3	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.5	.3	0.0	0.0
27	2.6	.9	.3	.1	.8	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	8.4	2.8	.8	.2	4.0	1.3	0.0	0.0	.3	.3	0.0	0.0	0.0	0.0
39	6.8	2.3	.3	.1	.2	.1	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0
42	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

RATIO

46	0.0	0.0	0.0	0.0	.9	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	.2	.1	.2	0.0	.3	.1	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	.1	.1	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	.1	.1	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	.1	.1	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	.7	0.0	.2	.1	0.0	0.0	0.0	0.0
TOTALS	29.0	9.7	3.9	1.9	14.0	4.7	14.6	0.0	5.6	2.1	3.1	1.5	.8	.1

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES													
	CLASS 1		CLASS 3		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11		CLASS 12	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	.7	0.0	.4	0.0	0.0	0.0	.3	0.0
7	0.0	0.0	.6	.1	0.0	0.0	12.1	0.0	.2	0.0	.1	0.0	0.0	0.0	.4	0.0
8	0.0	0.0	1.1	.1	0.0	0.0	.3	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	21.6	2.4	110.7	7.8	0.0	0.0	15.2	0.0	.1	0.0	0.0	0.0	5.0	.6	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	.3
35	35.8	4.0	101.1	8.0	2.1	.2	0.0	0.0	2.2	.2	0.0	0.0	0.0	0.0	0.0	0.0
36	17.8	2.0	4.2	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	.4	0.0	0.0
40	50.0	5.6	56.0	6.6	0.0	0.0	0.0	0.0	3.0	.2	0.0	0.0	0.0	0.0	0.0	0.0
41	9.9	1.1	.5	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	24.7	2.7	66.1	4.6	3.4	.4	0.0	0.0	3.6	.3	0.0	0.0	3.2	.4	0.0	0.0
45	0.0	0.0	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0

	CLASS 13	
	MEN	VEH
1	.3	0.0
2	.1	0.0
7	.4	0.0
8	.3	0.0
13	0.0	0.0
32	0.0	0.0
35	0.0	0.0
36	0.0	0.0
40	0.0	0.0
41	0.0	0.0
43	0.0	0.0
45	0.0	0.0
52	.4	.2

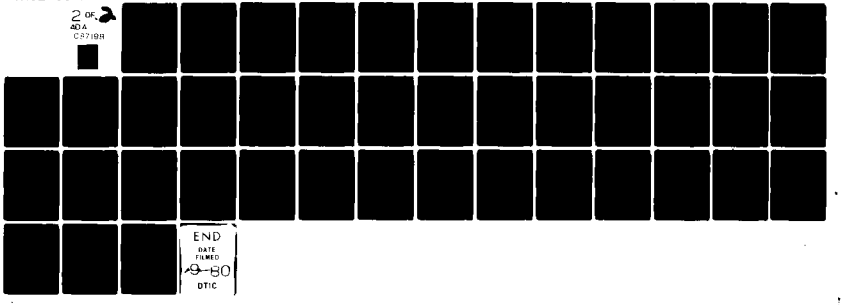
VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES													
	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 9		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	0.0	0.0	6.8	0.0	1.2	.3	0.0	0.0	0.0	0.0
5	0.0	0.0	.3	.1	1.1	.1	5.4	0.0	.6	0.0	0.0	0.0	4.5	.1
6	.6	.1	0.0	0.0	0.0	0.0	1.2	0.0	.1	0.0	0.0	0.0	0.0	0.0
14	21.7	2.6	1.7	.1	15.9	1.7	4.2	0.0	.8	.1	2.2	0.0	2.2	0.0

19	3.2	.4	.3	.1	10.0	1.1	.8	0.0	2.0	.7	0.0	0.0	0.0	0.0
20	.6	.1	.3	.1	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	.4	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.8	.2	0.0	0.0
27	3.7	.4	.5	.1	1.9	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	22.1	2.5	.7	.2	15.0	1.7	0.0	0.0	.2	.2	0.0	0.0	0.0	0.0
39	16.0	1.8	.5	.1	.6	.1	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0
42	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	1.1	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	.6	.1	.3	0.0	.6	.3	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	.1	.1	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	.1	.1	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	.3	.1	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	.3	.1	0.0	0.0	0.0	0.0

AD-A087 198 GENERAL RESEARCH CORP MCLEAN VA OPERATIONS ANALYSIS GROUP F/G 15/3
ARMY COMBAT CAPABILITIES ANALYSIS COMCAP 85.(U)
JUN 79 J B CAMPBELL, L J DONDERO DAAG39-78-C-0053
UNCLASSIFIED GRC-1051-01-79-CR NL

2 OF 2
AD A
087198



END
DATE FILMED
9-80
DTIC

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	56.9	0.0
2	67.2	0.0
7	24.8	12.0
8	3.2	1.6
11	11.3	49.1
29	1.7	0.0
32	3.1	0.0
35	34.9	0.0
36	6.4	0.0
40	40.8	0.0
41	36.3	0.0
43	49.6	0.0
45	15.3	0.0
50	2.4	0.0
52	105.6	0.0
58	28.8	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	143.2	0.0
5	248.0	10.4
6	72.0	0.0
12	40.0	0.0
14	24.6	108.1
19	83.7	0.0
20	12.0	0.0
21	65.6	0.0
22	2.1	0.0
25	15.6	0.0
26	1.9	0.0
27	7.5	6.2
38	71.5	0.0
39	14.4	0.0
42	14.0	0.0
46	30.3	0.0
47	127.2	0.0
50	91.4	0.0
51	121.6	0.0
52	267.2	0.0
54	217.3	0.0
55	3.4	0.0

BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	9.6	0.0
2	117.0	0.0
7	667.9	169.6
8	16.5	20.1
13	42.4	305.8
29	.9	0.0
32	21.4	0.0
35	16.9	0.0
36	8.7	0.0
40	241.7	0.0
41	153.6	0.0
43	22.4	0.0
45	274.1	0.0
50	33.7	0.0
52	5441.4	0.0
54	920.5	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	277.0	0.0
5	260.6	51.0
14	308.7	2225.7
19	2446.7	0.0
21	676.1	0.0
22	3.3	0.0
25	549.3	0.0
26	18.6	0.0
27	36.7	31.7
38	209.8	0.0
39	20.7	0.0
42	116.6	0.0
46	745.1	0.0
47	******	0.0
50	******	0.0
51	******	0.0
52	******	0.0
53	******	0.0
55	12.0	0.0

G*
(all 6 IFVs)

	RTK (1)	BMP (3)	BRDM (5)	MP SAG (4)	100 AT (9)	23/4 (11)	ARTY (16)	73 RR (10)	GRAIL (13)	57 AD (12)	INF, RPG (7)
B TK (1)	1.4 / 3.3	5.8 / 3.1	/ 2.3	/	/ 0.9	0.5 /	/ 0.1	/ 0.1	/	/	/ 0.1
TOW APC (5)	5.5 / 1.3	5.9 / 0.3	0.3 / 0.1	/	0.3 / 0.1	/	/ 0.1	/ 0.1	/	/	/
DRAGON (8)	4.1 / 0.5	3.1 / 1.3	/ 0.1	/	0.3 /	/	/ 0.1	/	/	/	/ 0.2
ATK HEL (15)	1.5 /	0.3 /	/	/	/	0.3 / 1.3	/	/	/	/ 0.3	/
ARTY (16)	/	0.2 /	/	/	0.1 /	/	/ 0.1	/	/	/	/
INF, LAW (7)	0.3 /	0.1 /	/	/	0.1 /	/	/	/	0.2 /	/	/
IFV (6)	5.2 / 2.1	12.3 / 2.0	0.3 / 0.1	/	0.5 / 0.3	0.3 /	/ 0.1	/ 0.1	/	0.1 /	/

G (mod)

ITERATIONS = 5
ROOTC = .979

BLUE FORCE DATA

UNIT	VALUE	NUM. UNITS	TOTAL VALUE
B TANK	1.000	5.00	5.000
[illegible]	3.311	2.25	2.766
DRAGON	1.299	4.55	5.909
[illegible]	1.243	1.20	1.309
ARTY	0.000	23.95	0.300
INF	.089	12.00	.592
ICV	3.777	2.15	8.121

TOTAL FORCE VALUE = 31.195

TOTAL INITIAL FORCE VALUE = 49.317

RED FORCE DATA

UNIT	VALUE	NUM. UNITS	TOTAL VALUE
R TANK	1.812	11.50	11.638
[illegible]	.434	1.43	12.00
BRDM	1.152	2.80	3.225
[illegible]	0.000	2.00	0.000
100 AT	.515	1.55	.799
[illegible]	.887	2.25	1.247
ARTY	.916	31.00	.508
[illegible]	.213	2.00	1.134
SMALL	0.000	15.00	0.000
[illegible]	.631	2.25	.114
INF	.013	27.00	.342

TOTAL FORCE VALUE = 31.339

TOTAL INITIAL FORCE VALUE = 49.227

INITIAL FORCE RATIO = 1.012

G*

ITERATIONS = 5
ROOTC = .883

BLUE FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
A TANK	1.000	5.15	5.150
TOW APC	3.443	3.05	10.502
DRAGON	1.413	4.95	6.996
ATK HEL	1.675	1.25	2.093
ARTY	.011	22.95	.246
INF	.045	12.00	.546
IFV	3.878	3.65	14.155

TOTAL FORCE VALUE = 39.688

TOTAL INITIAL FORCE VALUE = 59.664

RED FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
A TANK	1.341	10.95	14.589
BMP	.933	13.15	12.127
HMMW	1.098	2.65	2.909
MR SAG	0.000	2.00	0.000
105 AT	1.519	1.40	2.127
23/A	.557	3.45	1.923
ARTY	.028	31.00	.861
TARP	.368	2.00	.735
SMALL	0.000	14.00	0.000
ST AG	.132	2.95	.388
INF	.015	22.00	.338

TOTAL FORCE VALUE = 36.047

TOTAL INITIAL FORCE VALUE = 54.554

INITIAL FORCE RATIO = 1.19

Simulation Results
3301H, H*

The following two sets of simulation results reflect the outcomes of two variations on the fifth of the BSID amended option series. In 3301H*, the following insertions are made into the Base Case. On the Blue side, the XM1, ITV, IFV (with orders amended to bring all six into play), and the AAH helicopter, firing Hellfire, replace their counterparts of the COMCAP II Base Case Scenario. On the Red side, the T72, improved Saggers, and the improved ZSU-23/4 replace their counterparts. In 3301H, the changes are the same as those in 3301H* with the exception that the COBRA helicopter (rather than the AAH) carries the Hellfire.

SUMMARY OF TREATMENT 3301 H — 01/05/77

NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS — RED TARGET CLASSES

	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	.9	0.0	.1	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	.3	0.0	.1	0.0	0.0	0.0	1.3	0.0	.2	0.0	.1	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	.3	.1	0.0	0.0	0.0	0.0
8	0.0	0.0	.2	.1	.1	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	20.4	6.8	36.3	9.6	0.0	0.0	1.0	.3	1.5	0.0	.6	0.0	0.0	0.0	1.2	.4
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.1
34	0.0	0.0	3.3	1.1	0.0	0.0	1.4	.5	1.3	0.0	.1	0.0	0.0	0.0	1.0	.3
35	10.8	3.6	22.2	5.9	0.0	0.0	1.0	.3	0.0	0.0	1.6	.7	0.0	0.0	0.0	0.0
40	6.0	2.0	6.9	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1	.3	.2	.1	0.0	0.0
41	.6	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	15.6	5.2	36.0	11.5	0.0	0.0	2.0	.7	0.0	0.0	1.8	.5	0.0	0.0	2.0	.7
48	4.6	1.5	1.5	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	.6
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	58.0	19.3	106.9	31.6	.2	0.0	5.4	1.8	9.7	0.0	5.7	1.3	.5	.1	6.2	2.1

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	.1	0.0	.1	0.0
2	0.0	0.0	.2	0.0
7	.1	0.0	.1	0.0
8	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
40	.9	.3	0.0	0.0
41	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
48	.2	.1	0.0	0.0
52	0.0	0.0	0.0	0.0
TOTALS	1.3	.4	.5	0.0

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS — BLUE TARGET CLASSES

	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
4	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	1.3	.1	0.0	0.0	0.0	0.0
5	0.0	0.0	.3	.1	.2	.1	5.3	0.0	.9	.1	0.0	0.0	.4	.1
6	0.0	0.0	.1	.1	0.0	0.0	1.3	0.0	.5	0.0	0.0	0.0	0.0	0.0
10	12.0	4.3	1.6	.8	5.6	1.9	.3	0.0	.2	.1	0.0	0.0	0.0	0.0
11	.8	.3	.1	.1	1.0	.3	.1	0.0	.1	.1	0.0	0.0	0.0	0.0
20	1.4	.5	.1	.1	.3	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	3.2	1.6	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
28	2.4	.8	.1	.1	.6	.2	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0
38	5.0	1.8	.4	.2	3.0	1.0	0.0	0.0	.3	.2	0.0	0.0	0.0	0.0
39	5.2	1.7	.9	.3	.8	.1	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0
42	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	.1	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

52	0.0	0.0	0.0	0.0	0.0	0.0	.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	28.0	9.3	3.7	1.9	11.8	3.9	11.5	0.0	3.7	.9	3.3	1.7	.9	.1

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS — RED TARGET CLASSES

	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	1.7	0.0	.1	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	7.2	0.0	.2	0.0	.1	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	1.1	.1	0.0	0.0	0.0	0.0
8	0.0	0.0	.6	.1	.1	0.0	0.0	0.0	.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	83.8	7.3	172.3	24.4	0.0	0.0	3.4	.4	15.8	0.0	.4	0.0	0.0	0.0	3.6	.4
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	.1
34	0.0	0.0	14.9	1.5	0.0	0.0	3.7	.4	8.2	0.0	.1	0.0	0.0	0.0	3.4	.4
35	22.9	2.5	96.9	3.1	0.0	0.0	2.1	.2	0.0	0.0	3.3	.3	0.0	0.0	0.0	0.0
40	42.4	4.7	50.7	7.7	0.0	0.0	0.0	0.0	0.0	0.0	3.4	.2	.6	.1	0.0	0.0
41	1.5	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	69.7	7.7	177.2	15.0	0.0	0.0	2.1	.2	0.0	0.0	6.7	.6	0.0	0.0	7.3	.9
48	8.8	1.0	8.9	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	.8
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	.1	0.0	.1	0.0
2	0.0	0.0	.3	0.0
7	.3	0.0	.3	0.0
8	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
40	3.2	.4	0.0	0.0
41	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
48	.6	.1	0.0	0.0
52	0.0	0.0	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS — BLUE TARGET CLASSES

	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	.5	.1	0.0	0.0	0.0	0.0
5	0.0	0.0	.6	.1	.6	.1	5.4	0.0	.8	.1	0.0	0.0	2.4	.1
6	0.0	0.0	.6	.1	0.0	0.0	1.0	0.0	.3	0.0	0.0	0.0	0.0	0.0
14	36.6	4.1	2.4	.6	8.8	1.0	1.1	0.0	.3	.1	0.0	0.0	0.0	0.0
19	3.2	.4	.3	.1	2.1	.2	.3	0.0	.1	.1	0.0	0.0	0.0	0.0
20	5.8	.6	.3	.1	1.1	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0

38	10.5	1.2	.7	.3	9.0	1.0	0.0	0.0	.5	.2	0.0	0.0	0.0	0.0
39	5.7	.6	.4	.2	1.1	.1	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0
42	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	37.0	0.0
2	58.7	0.0
7	20.0	11.2
8	2.1	1.6
13	22.7	54.1
32	.4	4.0
34	46.7	4.5
35	32.4	0.0
40	32.0	0.0
41	23.7	0.0
43	50.3	0.0
48	5.3	0.0
52	21.4	0.0
54	17.1	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO-1	AMMO-2
[illegible]	137.4	0.0
5	239.2	0.0
[illegible]	72.0	0.0
12	40.3	0.0
[illegible]	31.6	75.0
19	41.9	0.0
[illegible]	10.9	0.0
21	44.8	0.0
[illegible]	.5	0.0
25	9.6	0.0
[illegible]	.5	0.0
27	8.1	7.2
[illegible]	57.8	0.0
39	14.0	0.0
43	12.6	0.0
46	15.9	0.0
47	63.5	0.0
50	30.6	0.0
51	44.2	0.0
52	265.8	0.0
54	74.8	0.0
55	3.0	0.0

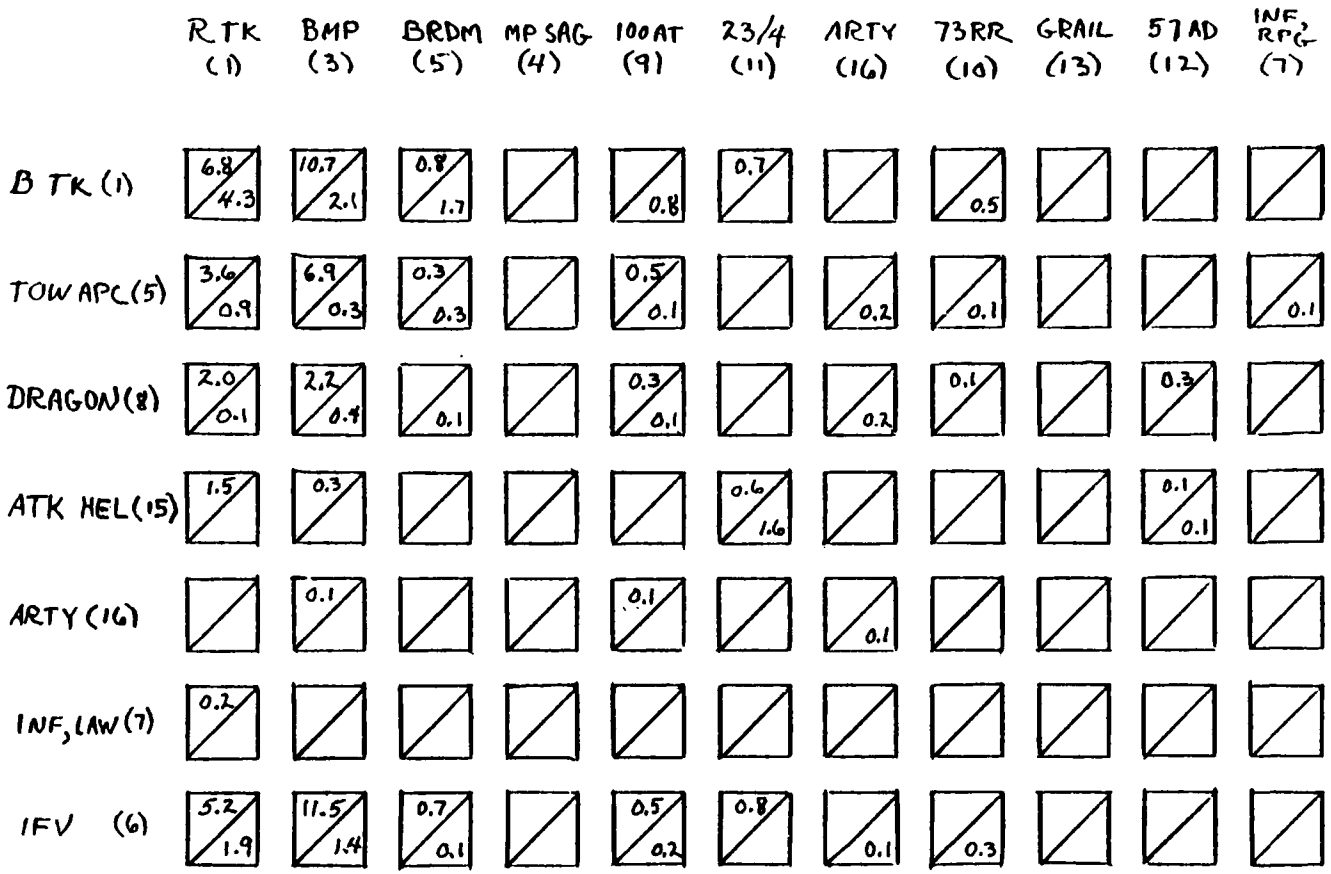
BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	15.7	0.0
2	106.7	0.0
7	201.1	91.9
8	13.9	11.0
11	81.1	490.8
32	1.3	61.1
34	935.9	125.4
35	43.1	0.0
40	249.1	0.0
41	247.4	0.0
43	26.9	0.0
48	6.8	0.0
50	6845.1	0.0
54	1552.4	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	161.8	0.0
5	133.0	39.3
10	216.7	1137.3
12	722.5	0.0
20	9.6	0.0
21	318.2	0.0
22	.9	0.0
25	132.7	0.0
26	2.5	0.0
27	14.3	56.3
28	96.3	0.0
39	10.9	0.0
42	69.7	0.0
45	187.7	0.0
47	3904.8	0.0
50	1403.0	0.0
51	5677.8	0.0
52	******	0.0
54	******	0.0
55	14.1	0.0

H


RTK (1)
BMP (3)
BRDM (5)
MP SAG (4)
100 AT (9)
23/4 (11)
ARTY (16)
73RR (10)
GRAIL (13)
57 AD (12)
INF, RPG (7)
B TK (1)
6.8 / 4.3
10.7 / 2.1
0.8 / 1.7
0.7
0.8
0.5
TOW APC (5)
3.6 / 0.9
6.9 / 0.3
0.3 / 0.3
0.5 / 0.1
0.2
0.1
0.1
DRAGON (8)
2.0 / 0.1
2.2 / 0.4
0.1
0.3 / 0.1
0.2
0.1
0.3
ATK HEL (15)
1.5
0.3
0.6 / 1.6
0.1 / 0.1
ARTY (16)
0.1
0.1
0.1
INF, LAW (7)
0.2
IFV (6)
5.2 / 1.9
11.5 / 1.4
0.7 / 0.1
0.5 / 0.2
0.8
0.1
0.3

H

ITERATIONS = 4
ROOTC = .783

BLUE FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
M TANK	1.000	5.35	5.350
IOW APC	1.021	3.05	3.114
DRAGON	.257	5.55	1.426
ATK HEL	.759	1.15	.872
ARTY	.003	22.95	.068
INF	.007	12.00	.090
IFV	1.230	4.05	4.981

TOTAL FORCE VALUE = 15.902

TOTAL INITIAL FORCE VALUE = 24.680

RED FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
R TANK	.574	10.35	5.938
BMP	.193	17.20	3.314
BRDM	.204	7.10	1.448
MP SAG	0.000	2.00	0.000
100 AT	.681	1.35	.919
23/4	.322	2.95	.951
ARTY	.010	31.00	.297
23RP	.398	1.95	.761
GRAIL	0.000	15.00	0.000
57 AD	.021	2.80	.059
INF	.003	27.00	.080

TOTAL FORCE VALUE = 14.705

TOTAL INITIAL FORCE VALUE = 24.113

INITIAL FORCE RATIO = 1.024

SUMMARY OF TREATMENT 3301 01/18/79
NUMBER OF REPLICATIONS 15 H *

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS — RED TARGET CLASSES

	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	.2	.1	.3	.1	0.0	0.0
2	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	2.4	0.0	.1	0.0	.3	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	.3	0.0	.3	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0
13	17.8	5.9	37.1	9.7	0.0	0.0	.9	.1	3.7	0.0	.3	0.0	0.0	0.0	2.0	.7
34	0.0	0.0	6.9	2.3	0.0	0.0	1.2	.4	2.0	0.0	0.0	0.0	0.0	0.0	.6	.2
35	17.0	5.7	19.4	6.0	0.0	0.0	.8	.3	0.0	0.0	.8	.2	0.0	0.0	1.0	.3
40	3.2	1.1	4.9	1.7	0.0	0.0	0.0	0.0	0.0	0.0	1.1	.3	0.0	0.0	0.9	0.0
41	.4	.1	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	14.0	4.7	34.5	10.7	0.0	0.0	1.8	.6	0.0	0.0	2.5	.7	0.0	0.0	1.8	.6
48	5.8	1.9	5.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	.5
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	58.2	19.4	107.9	31.8	.1	0.0	4.2	1.4	11.5	0.0	5.3	1.3	1.0	.1	6.8	2.3

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	.3	0.0	.3	0.0
2	.1	0.0	.3	0.0
7	.1	0.0	.1	0.0
8	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0
34	.1	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
40	.2	.1	0.0	0.0
41	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
48	.1	.1	0.0	0.0
52	0.0	0.0	.3	.3
TOTALS	.9	.1	1.0	.3

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS — BLUE TARGET CLASSES

	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	.7	.1	0.0	0.0
5	.2	.1	0.0	0.0	0.0	0.0	3.9	0.0	.7	.1	0.0	0.0
6	.2	.1	0.0	0.0	0.0	0.0	.9	0.0	.3	0.0	0.0	0.0
14	10.2	3.4	2.0	1.0	3.6	1.2	.1	0.0	.3	.1	0.0	0.0
19	1.4	.5	.1	.1	1.4	.5	0.0	0.0	.3	.1	0.0	0.0
20	.2	.1	.3	.1	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	1.2
27	2.2	.7	.7	.3	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0
38	6.8	2.3	.7	.3	3.0	1.0	0.0	0.0	.3	.1	0.0	0.0
39	6.8	2.3	.4	.2	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	.2	.1	.1	0.0	0.0	0.0	0.0	0.0

50	0.0	0.0	0.0	0.0	0.0	0.0	.5	0.0	.1	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	.1	0.0	0.0	0.0
TOTALS	28.0	9.3	4.1	2.1	9.8	3.3	9.1	0.0	2.5	.5	2.4	1.2

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS — RED TARGET CLASSES

	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	.3	.1	.8	.3	0.0	0.0
2	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	5.0	0.0	.3	0.0	.8	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	.5	0.0	.6	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0
13	45.6	5.1	224.1	14.5	0.0	0.0	1.1	.1	30.1	0.0	.4	0.0	0.0	0.0	7.3	.8
34	0.0	0.0	19.1	2.1	0.0	0.0	2.3	.3	5.1	0.0	0.0	0.0	0.0	0.0	2.8	.3
35	58.7	6.5	125.5	10.3	0.0	0.0	1.9	.2	0.0	0.0	2.7	.2	0.0	0.0	3.4	.4
40	8.3	.9	29.1	3.5	0.0	0.0	0.0	0.0	0.0	0.0	3.4	.2	0.0	0.0	0.0	0.0
41	2.4	.3	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	29.1	3.2	101.7	9.8	0.0	0.0	4.9	.5	0.0	0.0	2.8	.2	0.0	0.0	7.5	.8
48	13.5	1.5	22.7	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	.6
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	.4	0.0	.2	0.0
2	.1	0.0	.4	0.0
7	.1	0.0	.1	0.0
8	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0
34	.1	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0
40	.6	.1	0.0	0.0
41	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
48	.3	.1	0.0	0.0
52	0.0	0.0	.4	.4

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS — BLUE TARGET CLASSES

	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	.8	.1	0.0	0.0
5	.6	.1	0.0	0.0	0.0	0.0	2.6	0.0	.8	.1	0.0	0.0
6	.6	.1	0.0	0.0	0.0	0.0	.8	0.0	.2	0.0	0.0	0.0
14	48.6	5.4	4.0	1.0	10.5	1.2	.3	0.0	.5	.3	0.0	0.0
19	5.0	.6	.3	.1	3.7	.4	0.0	0.0	.5	.1	0.0	0.0
20	.6	.1	.5	.1	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	.6
27	5.7	.6	1.0	.2	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0
38	17.3	1.9	1.0	.2	3.9	.4	0.0	0.0	.5	.1	0.0	0.0
39	16.0	1.8	.7	.2	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0

42	0.0	0.0	0.0	0.0	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	1.1	.1	.1	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	.1	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	.6	0.0	.1	0.0	0.0	0.0

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	57.0	0.0
2	64.3	0.0
7	20.8	10.4
8	.5	.5
13	16.9	55.6
32	.1	3.1
34	69.7	11.5
35	34.5	0.0
40	29.5	0.0
41	21.3	0.0
43	49.7	0.0
48	7.3	0.0
52	88.4	0.0
54	10.0	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	136.0	0.0
5	236.0	6.4
6	72.0	0.0
12	40.0	0.0
14	23.6	61.8
19	48.7	2.0
20	10.3	0.0
21	63.2	0.0
22	1.1	0.0
25	10.0	0.0
26	1.0	0.0
27	6.2	7.9
38	62.7	0.0
39	16.0	0.0
42	15.8	0.0
46	28.7	0.0
47	36.4	0.0
50	27.2	0.0
51	33.2	0.0
52	266.0	0.0
54	44.9	0.0
55	3.3	0.0

BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	19.3	0.0
2	46.8	0.0
7	900.5	191.3
8	4.3	4.3
13	52.6	227.1
32	.3	23.3
34	410.7	155.1
35	16.7	0.0
40	182.1	0.0
41	220.4	0.0
43	10.9	0.0
48	13.1	0.0
52	5808.7	0.0
54	517.7	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	260.6	0.0
5	137.1	59.0
14	149.8	670.6
19	632.9	60.0
20	17.6	0.0
21	900.5	0.0
22	1.7	0.0
25	314.7	0.0
26	7.3	0.0
27	13.2	32.5
38	122.5	0.0
39	15.0	0.0
42	67.5	0.0
46	321.5	0.0
47	3342.4	0.0
50	3726.6	0.0
51	3689.3	0.0
52	******	0.0
54	7981.1	0.0
55	5.1	0.0

H*

	RTK (1)	BMP (3)	BRDM (5)	MP SAG (4)	100 AT (9)	23/4 (11)	ARTY (16)	73 RR (10)	GRAIL (13)	57 AD (12)	INF, RPG (7)
B TK (1)	5.9 / 3.4	12.0 / 2.8	0.5 / 2.3		0.7	0.9	0.2	0.1			
TOW APC (5)	5.7 / 1.0	6.0 / 0.4	0.3 / 0.2		0.2 / 0.3	0.3		0.1			
DRAGON (8)	1.1 / 0.1	1.7 / 0.2			0.3		0.2			0.1	
ATK HEL (15)	1.9	1.3				0.5 / 1.2				0.1	
ARTY (16)					0.1			0.1			
INF, LAW (7)	0.1	0.1							0.3		
IFV (6)	4.7 / 1.3	10.7 / 1.6	0.6 / 0.1		0.7 / 0.1	0.6		0.1			0.1

H*

ITERATIONS = 4
RJOTC = .412

BLUE FORCE DATA

WPN	VALUE	VJM. WPNS	TOTAL VALUE
B TANK	1.000	5.35	5.350
TCM APC	1.321	2.95	3.896
DRAGON	.167	5.75	.958
ATK HEL	.808	1.40	1.131
ARTY	.005	23.00	.071
INF	.005	12.00	.060
IFV	1.157	4.35	5.033

TOTAL FORCE VALUE = 16.499

TOTAL INITIAL FORCE VALUE = 24.972

R:D FORCE DATA

WPN	VALUE	VJM. WPNS	TOTAL VALUE
R TANK	.492	10.30	5.066
BMP	.247	17.10	4.231
BRDM	.946	2.30	2.175
MP SAG	0.000	2.00	0.000
100 AT	.729	1.35	.984
23/4	.276	2.85	.787
ARTY	.006	31.00	.189
73RR	.145	1.95	.282
GRAIL	0.000	14.85	0.000
ST AD	0.000	2.95	0.000
INF	.003	27.00	.094

TOTAL FORCE VALUE = 15.007

TOTAL INITIAL FORCE VALUE = 23.972

INITIAL FORCE RATIO = 1.042

Simulation Results
3301I

The following set of simulation results reflect the outcome of the sixth of the BSID amended option series. It includes the H* insertions and an improved SA7. Additionally, it includes two SA9 who travel with the ZSU-23/4.

SUMMARY OF TREATMENT 3301 I 01/11/79
NUMBER OF REPLICATIONS 15

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	.7	.1	.4	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	1.5	0.0	.9	0.0	.3	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	1.6	0.0	.3	0.0	.3	0.0	0.0	0.0
13	19.2	5.9	30.7	8.1	0.0	0.0	1.0	.3	1.4	0.0	1.0	0.0	.3	.1	.8	.3
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.2	0.0	0.0
34	0.0	0.0	5.1	1.3	0.0	0.0	.8	.3	.3	0.0	0.0	0.0	.3	0.0	.2	.1
35	10.4	3.5	23.1	7.4	0.0	0.0	.4	.1	0.0	0.0	1.3	.3	0.0	0.0	1.0	.3
40	4.2	1.4	5.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	.5	0.0	0.0
41	.5	.2	.5	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
43	16.0	5.3	36.0	11.3	0.0	0.0	1.2	.4	0.0	0.0	2.8	.9	0.0	0.0	2.8	.9
48	6.2	2.1	2.9	.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	.4
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	1.1	.3	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0
TOTALS	56.6	18.9	105.7	31.5	.1	0.0	3.4	1.1	6.5	0.0	6.5	1.3	4.3	1.2	6.0	2.0

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	.1	0.0	0.0	0.0
2	.2	0.0	.1	0.0
7	0.0	0.0	.1	0.0
13	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0
34	.5	.1	0.0	0.0
35	.2	.1	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
48	.8	.3	0.0	0.0
52	0.0	0.0	.3	.1
54	0.0	0.0	0.0	0.0
TOTALS	1.8	.5	1.1	.1

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES											
	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.1	0.0	0.1	0.0	4.0	0.0	1.1	.2	0.0	0.0
5	0.0	0.0	.1	.1	0.0	0.0	4.3	0.0	.7	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	.5	0.0	0.0	0.0
14	11.4	3.8	2.1	1.1	5.0	1.7	.1	0.0	.1	0.0	0.0	0.0
19	1.4	.5	.1	.1	1.1	.1	0.0	0.0	.6	.2	0.0	0.0
20	.5	.2	0.0	0.0	1.0	.3	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	2.0	1.2
37	2.0	.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	7.6	2.5	.1	.2	2.0	.1	0.0	0.0	.5	.2	0.0	0.0
39	5.7	1.8	.2	.1	.5	.1	0.0	0.0	.1	.1	0.0	0.0
42	0.0	0.0	0.1	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0

46	0.0	0.0	0.0	0.0	.2	.1	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	.9	.1	0.0	0.0	.1	.1	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.9	.2
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.9	.2
TOTALS	28.6	9.5	3.5	1.7	11.0	3.7	10.1	0.0	3.5	1.0	3.2	1.6

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS — RED TARGET CLASSES

	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	.8	.1	.3	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	2.6	0.0	.8	0.0	.2	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	5.0	0.0	.9	0.0	.9	0.0	0.0	0.0
13	100.0	11.1	129.2	9.3	0.0	0.0	2.1	.2	12.4	0.0	1.1	0.0	.6	.3	3.2	.4
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	.2	0.0	0.0
34	0.0	0.0	9.1	.9	0.0	0.0	1.0	.2	1.1	0.0	0.0	0.0	.4	0.0	.5	.1
35	23.0	2.6	60.3	4.5	0.0	0.0	1.1	.1	0.0	0.0	5.4	.4	0.0	0.0	4.7	.5
40	13.9	1.5	25.6	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	.6	0.0	0.0
41	1.5	.2	1.8	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0
43	61.3	6.8	109.6	9.3	0.0	0.0	3.6	.4	0.0	0.0	7.7	.8	0.0	0.0	7.0	.8
48	13.5	1.5	20.2	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	.4
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	2.0	.2	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0

	CLASS 12		CLASS 13	
	MEN	VEH	MEN	VEH
1	.1	0.0	0.0	0.0
2	.2	0.0	.5	0.0
7	0.0	0.0	.7	0.0
13	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0
34	1.5	.1	0.0	0.0
35	.6	.1	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
48	1.9	.2	0.0	0.0
52	0.0	0.0	.2	.1
54	0.0	0.0	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS — BLUE TARGET CLASSES

	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
*	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	.9	.2	0.0	0.0
	0.0	0.0		.1	0.0	0.0	5.7	0.0	.5	0.0	0.0	0.0

14	29.8	3.3	3.1	.8	11.1	1.2	.1	0.0	.1	0.0	0.0	0.0
19	3.7	.4	.3	.1	6.0	.7	0.0	0.0	1.1	.4	0.0	0.0
20	1.5	.2	0.0	0.0	3.4	.4	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	.5
27	8.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	26.8	3.0	.7	.2	10.0	1.2	0.0	0.0	1.8	.6	0.0	0.0
39	14.0	1.6	.4	.2	1.1	.1	0.0	0.0	.1	.1	0.0	0.0
42	0.0	0.0	0.0	0.0	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0	.6	.1	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	1.1	.1	0.0	0.0	.1	.1	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	.8	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.7	.2
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.7	.2

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	56.8	0.0
2	55.2	0.0
7	12.0	17.6
8	1.1	.5
11	19.5	51.1
12	4.7	24.5
34	58.9	1.2
35	34.2	0.0
40	32.0	0.0
41	29.3	0.0
43	53.3	0.0
48	6.6	0.0
52	134.0	0.0
54	47.5	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	139.2	0.0
5	207.2	6.4
6	72.0	0.0
13	40.0	0.0
14	29.2	72.0
19	94.7	1.0
20	12.0	0.0
21	59.4	0.0
22	.9	0.0
25	13.2	0.0
26	3.1	0.0
27	10.2	5.4
38	61.0	0.0
39	16.1	0.0
42	10.0	0.0
46	21.5	0.0
47	74.0	0.0
50	58.4	0.0
51	86.7	0.0
52	209.6	0.0
53	1.1	0.0
54	86.8	0.0
55	2.1	0.0

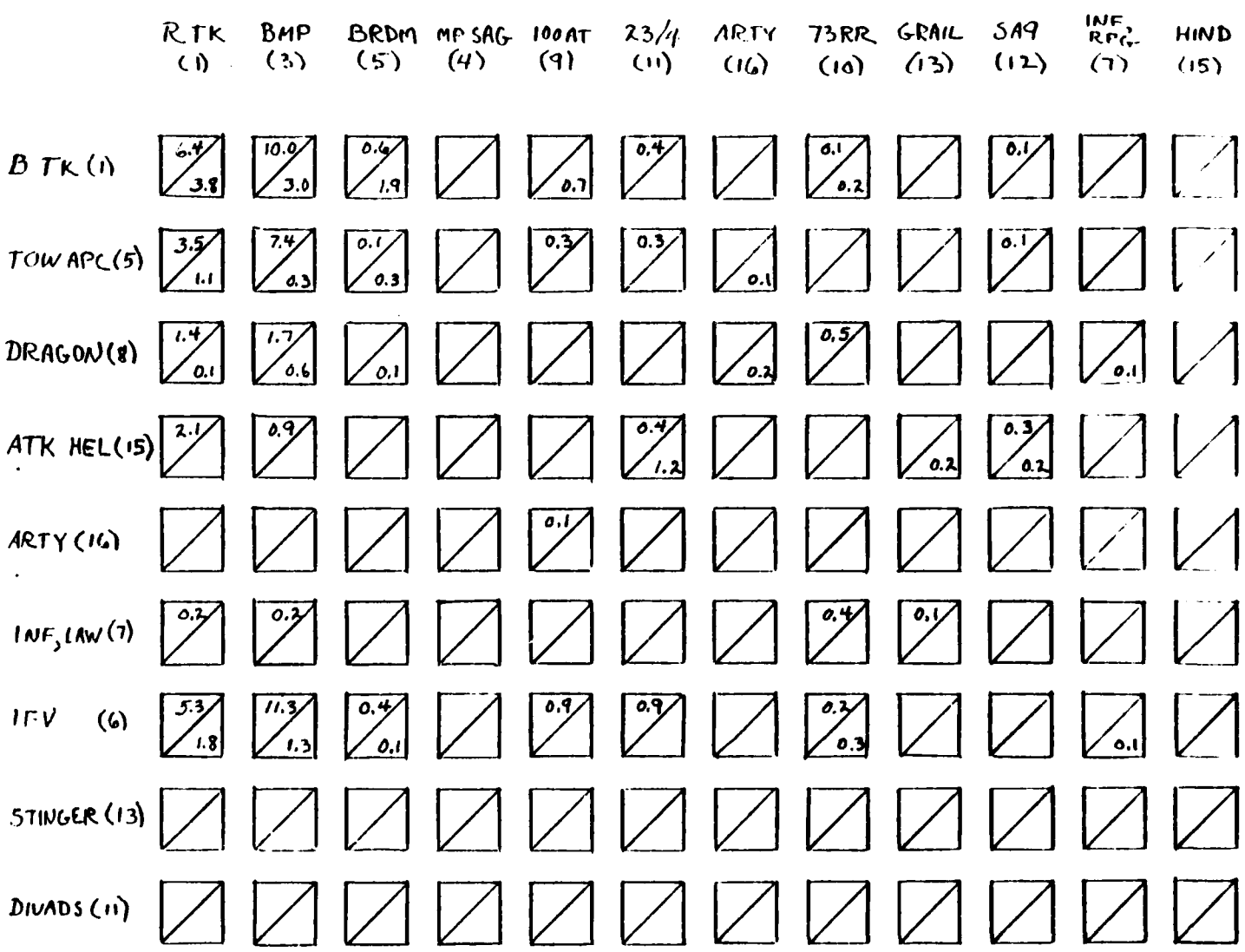
BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	35.3	0.0
2	119.3	0.0
7	123.4	203.0
8	7.9	4.3
11	78.0	287.4
12	71.8	367.1
34	525.1	119.7
35	16.2	0.0
40	174.6	0.0
41	196.1	0.0
43	20.1	0.0
48	14.8	0.0
52	8430.0	0.0
54	5582.4	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	139.9	0.0
5	283.9	57.0
10	197.2	1435.9
17	819.1	15.0
21	820.1	0.0
23	.4	0.0
25	577.0	0.0
27	21.8	0.0
27	98.9	43.4
30	70.6	0.0
33	14.4	0.0
42	71.6	0.0
46	818.0	0.0
47	8416.0	0.0
50	8953.5	0.0
51	******	0.0
52	******	0.0
53	3.4	0.0
54	******	0.0
55	5.8	0.0

I


RTK (1)
BMP (3)
BRDM (5)
MP SAG (4)
100 AT (9)
23/4 (11)
ARTY (16)
73RR (10)
GRAIL (13)
SA9 (12)
INF RPG (7)
HIND (15)
B TK (1)
6.4 / 3.8
10.0 / 3.0
0.6 / 1.9
0.7
0.4
0.1 / 0.2
0.1
TOW APC (5)
3.5 / 1.1
7.4 / 0.3
0.1 / 0.3
0.3
0.3
0.1
0.1
DRAGON (8)
1.4 / 0.1
1.7 / 0.6
0.1
0.2
0.5
0.1
ATK HEL (15)
2.1
0.9
0.4 / 1.2
0.2
0.3 / 0.2
ARTY (16)
0.1
INF, LAW (7)
0.2
0.2
0.4
0.1
IFV (6)
5.3 / 1.8
11.3 / 1.3
0.4 / 0.1
0.9
0.9
0.2 / 0.3
0.1
STINGER (13)
DIVADS (11)

I

ITERATIONS = 4
ROOTC = .803

BLUE FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
B TANK	1.000	5.25	5.250
TOW APC	1.018	3.15	3.208
DRAGON	.196	5.50	1.079
ATK HEL	1.025	1.20	1.230
ARTY	.001	23.00	.033
INF	.020	12.00	.235
IFV	1.286	4.15	5.338

TOTAL FORCE VALUE = 16.373

TOTAL INITIAL FORCE VALUE = 25.287

RED FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
R TANK	.552	10.55	5.823
BMP	.237	17.25	4.090
BRDM	.771	2.45	1.889
MP SAG	0.000	2.00	0.000
100 AT	.416	1.35	.562
23/4	.329	3.00	.987
ARTY	.004	31.00	.113
73RR	.336	1.40	.470
GRAIL	.011	14.95	.165
SA9	.094	1.75	.165
INF	.004	27.00	.119

TOTAL FORCE VALUE = 14.383

TOTAL INITIAL FORCE VALUE = 24.583

INITIAL FORCE RATIO = 1.029

Simulation Results
3301J

The following set of simulation results reflect the outcome of the seventh of the BSID amended option series. It includes the 3301I insertions and adds two HIND helicopters on the Red side and a DIVADS and a STINGER on the Blue side.

SUMMARY OF TREATMENT 3301 J
NUMBER OF REPLICATIONS 15

01/16/79

AVERAGE TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS — RED TARGET CLASSES

	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	1.5	0.0	.1	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	.5	0.0	0.0	0.0	1.7	0.0	.5	0.0	.2	0.0	0.0	0.0
7	.2	.1	0.0	0.0	.5	0.0	0.0	0.0	.9	0.0	.1	0.0	.1	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	14.8	4.9	37.6	9.9	0.0	0.0	.8	.3	1.7	0.0	1.1	0.0	0.0	0.0	1.6	.5
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
34	0.0	0.0	6.2	2.0	0.0	0.0	.8	.3	.9	0.0	0.0	0.0	.9	0.0	.5	.2
35	14.0	4.7	21.0	6.4	0.0	0.0	1.0	.3	0.0	0.0	.4	.1	0.0	0.0	0.0	0.0
40	4.2	1.4	4.1	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	.2	0.0	0.0
41	.4	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	14.4	4.8	33.5	10.3	0.0	0.0	.2	.1	0.0	0.0	3.7	1.1	0.0	0.0	1.6	.5
48	9.8	3.3	3.5	.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	.6
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	.8	.3	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	.3	.1	0.0	0.0
TOTALS	57.8	19.3	105.8	31.0	1.2	0.0	2.8	.9	7.1	0.0	5.9	1.3	3.1	.7	5.6	1.9

	CLASS 12		CLASS 13		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	.2	0.0	0.0	0.0
8	0.0	0.0	.1	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	.1	.1
32	0.0	0.0	0.0	0.0	0.0	0.0
34	.8	.3	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0	0.0	0.0
48	.2	.1	0.0	0.0	0.0	0.0
52	0.0	0.0	.5	.1	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	1.0	.3	.9	.1	.1	.1

AVERAGE TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS — BLUE TARGET CLASSES

	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 13		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	.9	0.0	.3	0.0	0.0	0.0	0.0	0.0
5	.2	.1	.1	.1	.6	.2	5.5	0.0	.7	0.0	.3	0.0	0.0	0.0	.4	.1
6	.4	.1	0.0	0.0	0.0	0.0	1.5	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
14	11.0	3.7	2.9	1.4	2.6	.9	.7	0.0	.6	.2	0.0	0.0	0.0	0.0	0.0	0.0
19	.2	.1	0.0	0.0	.3	.1	0.0	0.0	.5	.4	0.0	0.0	0.0	0.0	0.0	0.0
20	.4	.1	0.0	0.0	.6	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0
27	1.4	.5	0.0	0.0	1.2	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	7.0	2.3	.1	.1	2.6	.9	0.0	0.0	.3	.2	0.0	0.0	0.0	0.0	0.0	0.0
39	4.8	1.6	.7	.3	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
49	2.4	.8	0.0	0.0	4.8	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.5	.3	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	.1	.1	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	.1	0.0	0.0
TOTALS	27.8	9.3	3.7	1.9	12.6	4.2	12.5	0.0	3.8	1.1	.7	0.0	2.8	1.4	.4	.1

VARIANCE OF TARGET KILLS BY WEAPON TYPE

BLUE WEAPON NUMBERS	RED TARGET CLASSES															
	CLASS 1		CLASS 3		CLASS 4		CLASS 5		CLASS 7		CLASS 9		CLASS 10		CLASS 11	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	4.4	0.0	.1	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	4.0	0.0	.6	0.0	.3	0.0	0.0	0.0
7	.6	.1	0.0	0.0	1.4	0.0	0.0	0.0	2.0	0.0	.1	0.0	.1	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	75.2	8.4	223.8	14.7	0.0	0.0	1.9	.2	13.2	0.0	3.1	0.0	0.0	0.0	6.3	.7
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	.1	0.0	0.0
34	0.0	0.0	28.7	2.9	0.0	0.0	1.9	.2	4.6	0.0	0.0	0.0	1.7	0.0	2.8	.3
35	43.3	4.8	81.4	7.8	0.0	0.0	2.1	.2	0.0	0.0	1.3	.1	0.0	0.0	0.0	0.0
40	12.6	1.4	17.1	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	.3	0.0	0.0
41	1.1	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	23.4	2.6	131.3	11.5	0.0	0.0	.6	.1	0.0	0.0	9.8	.8	8.0	0.0	10.1	1.1
48	23.7	2.6	11.5	.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	.7
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	3.2	.4	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	.7	.1	0.0	0.0

	CLASS 12		CLASS 13		CLASS 15	
	MEN	VEH	MEN	VEH	MEN	VEH
1	0.0	0.0	.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	.3	0.0	0.0	0.0
8	0.0	0.0	.1	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	.3	.1
32	0.0	0.0	0.0	0.0	0.0	0.0
34	1.9	.2	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0	0.0	0.0
48	.6	.1	0.0	0.0	0.0	0.0
52	0.0	0.0	.1	.1	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0

VARIANCE OF TARGET KILLS BY WEAPON TYPE

RED WEAPON NUMBERS	BLUE TARGET CLASSES															
	CLASS 1		CLASS 5		CLASS 6		CLASS 7		CLASS 8		CLASS 13		CLASS 15		CLASS 16	
	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH	MEN	VEH
3	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	1.1	0.0	.2	0.0	0.0	0.0	0.0	0.0
5	.6	.1	.3	.1	1.5	.2	3.7	0.0	.7	0.0	.2	0.0	0.0	0.0	2.9	.1
6	1.1	.1	0.0	0.0	0.0	0.0	1.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
14	39.4	4.4	6.2	1.5	7.5	.8	1.4	0.0	2.5	.6	0.0	0.0	0.0	0.0	0.0	0.0
19	.6	.1	0.0	0.0	.6	.1	0.0	0.0	1.8	.8	0.0	0.0	0.0	0.0	0.0	0.0
20	1.1	.1	0.0	0.0	1.5	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	.6	0.0	0.0
27	5.0	.6	0.0	0.0	4.9	.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	25.3	2.8	.3	.1	6.3	.7	0.0	0.0	.5	.2	0.0	0.0	0.0	0.0	0.0	0.0
39	12.6	1.4	1.5	.4	0.0	0.0	0.0	0.0	.5	.1	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
49	5.4	.6	0.0	0.0	10.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	.3	.3	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.5	.2	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	.5	0.0	.3	.1	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.5	.1	0.0	0.0

BLUE AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	56.8	0.0
2	52.3	0.0
7	10.4	12.0
8	.5	1.1
13	14.4	55.5
28	.3	0.0
32	6.9	16.8
34	53.9	14.1
35	33.0	0.0
40	35.5	0.0
41	26.3	0.0
43	47.9	0.0
48	7.5	0.0
52	116.8	0.0
54	51.3	0.0
56	.1	0.0

RED AVERAGE AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	148.0	0.0
5	244.8	6.4
6	72.0	0.0
12	40.0	0.0
14	22.3	69.5
19	45.7	2.7
20	12.0	0.0
21	60.8	0.0
22	.9	0.0
27	9.0	4.5
38	60.9	0.0
39	15.7	0.0
42	9.4	0.0
46	17.9	0.0
47	65.7	0.0
49	5.3	0.0
50	53.4	0.0
51	83.4	0.0
52	229.6	0.0
53	1.6	0.0
54	124.0	0.0
55	2.3	0.0

BLUE VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
1	19.9	0.0
2	99.4	0.0
7	161.8	226.3
8	4.3	7.9
13	30.7	565.4
28	1.1	0.0
32	181.4	131.3
34	575.1	264.3
35	30.9	0.0
40	327.3	0.0
41	184.5	0.0
43	10.6	0.0
48	8.8	0.0
52	4886.3	0.0
54	4570.8	0.0
56	.1	0.0

RED VARIANCE OF AMMUNITION EXPENDITURE BY WEAPON TYPE

WEAPON TYPE	AMMO 1	AMMO 2
3	137.1	0.0
5	222.2	30.4
14	145.9	1381.4
19	1196.2	106.7
21	1264.5	0.0
22	2.4	0.0
27	40.1	39.1
38	279.5	0.0
39	14.7	0.0
42	118.1	0.0
46	247.7	0.0
47	9177.1	0.0
49	2.2	0.0
50	8777.8	0.0
51	******	0.0
52	******	0.0
53	6.4	0.0
54	******	0.0
55	12.8	0.0

J

	RTK (1)	BMP (3)	BRDM (5)	MP SAG (4)	100 AT (9)	23/4 (11)	ARTY (16)	73RR (10)	GRAIL (13)	SA9 (12)	INF RPG (7)	HIND (15)
B TK (1)	4.9 / 3.7	11.9 / 2.4	0.6 / 1.6		/ 0.5	0.7 /	/ 0.2	/ 0.1		0.3 /		/ 0.8
TOW APC (5)	4.7 / 1.4	6.4 / 0.1	0.3 / 0.3		0.1 /		/ 0.1					
DRAGON (8)	1.4 / 0.3	1.5 / 0.6	/ 0.1					0.2 /			/ 0.1	
ATK HEL (15)	3.3 /	0.9 /				0.6 / 1.0			/ 0.1	0.1 / 0.3		
ARTY (16)	0.1 /						/ 0.1					
INF LAW (7)	0.1 /							0.4 /	0.1 /			
IFV (6)	4.8 / 0.9	10.3 / 1.0	0.1 /		1.1 / 0.4	0.5 /	/ 0.2	0.1 / 0.2				/ 1.6
STINGER (13)												
DIVADS (11)												0.1 /

J

ITERATIONS = 5
ROOTC = .887

BLUE FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
B TANK	1.000	5.35	5.350
TOW APC	1.241	3.05	3.784
DRAGON	.187	5.45	1.017
ATK HEL	1.627	1.30	2.115
ARTY	.002	22.95	.051
INF	.010	12.00	.122
IFV	1.344	3.90	5.242
STINGER	0.000	1.00	0.000
DIVADS	.119	1.00	.119

TOTAL FORCE VALUE = 17.800

TOTAL INITIAL FORCE VALUE = 27.693

RED FORCE DATA

WPN	VALUE	NUM. WPNS	TOTAL VALUE
R TANK	.574	10.35	5.945
BMP	.252	17.50	3.930
BRDM	.692	2.55	1.766
MP SAG	0.000	2.00	0.000
100 AT	.682	1.35	.920
2S4	.473	3.05	1.443
ARTY	.017	31.00	.526
73RR	.198	1.65	.327
GRAIL	.010	14.95	.144
SA9	.234	1.85	.433
INF	.001	27.00	.017
HIND	1.342	1.95	2.617

TOTAL FORCE VALUE = 17.568

TOTAL INITIAL FORCE VALUE = 27.714

INITIAL FORCE RATIO = .939

TABLE 4.1

WEV/UEV RESUME BASED ON M60 TANKS

	BASE	D	G	G mod	G*
M60	1.00	1.00	1.00	1.00	1.00
TOW	2.98	3.90	(3.36	3.31	3.44
DGN	1.63	2.21	(1.31	1.30	1.41
COBRA	2.11	3.19	1.36	1.29	1.68
ARTY	.01	.00	.00	.00	.01
INF	.07	.20	.05	.05	.05
IFV			1.97	(3.78	3.88
RTK	.67	(1.53	.94	1.01	1.34
BMP	.50	.48	(.55	.63	.63
BRDM	1.18	.73	(1.23	1.15	1.06
M SAG	1.78	.78	(.00	.00	.00
100 AT	.20	.46	.47	.52	1.52
Q23	.78	1.37	.45	.38	.56
ARTY	.03	.03	.01	.02	.03
73RR	.26	.40	.34	.54	.37
GRAIL	.00	.03	.00	.00	.00
57 AD	.18	.42	.05	.04	.15
INF	.02	.02	.01	.01	.01
B/R	.855	.785	1.034	1.002	1.019

TABLE 4.2

WEV/UEV RESUME BASED ON XM1 TANKS

	E	F	H	H*	I	J
XM1	1.00	1.00	1.00	1.00	1.00	1.00
TOW	.75	1.50	1.02	1.32	1.02	1.24
DGN	.33	1.30	(.26	.17	.20	.19
ATK HEL	.49	.98	.76	.81	1.03	1.63
ARTY	.01	.00	.00	.00	.00	.00
INF	.01	.08	.01	.01	.02	.01
IFV			1.23	1.16	1.29	1.34
STINGER						.00
DIVADS						.12
RTK	.27	.73	.57	.49	.55	.57
BMP	.17	.29	(.19	.25	.24	.20
BRDM	.74	.50	(.80	.95	.77	.69
M SAG	1.09	.51	(.00	.00	.00	.00
100 AT	.47	.24	.68	.73	.42	.68
Quad 23	.16	.26	.32	.28	.33	.47
ARTY	.00	.02	.01	.01	.00	.02
73 RR	.05	.13	.39	.15	.34	.20
GRAIL	.00	.01	.00	.00	.01	.01
57 AD	.06	.10	.02	.00	—	--
INF	.00	.01	.00	.00	.00	.00
SA9					.09	.23
HIND						1.34
B/R	.939	.913	1.024	1.042	1.029	.999